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commodore HORIZONS

January 1986

Into gear with

REVS

Working with the C128 system

Win a Little Computer Person

Software for the young at heart

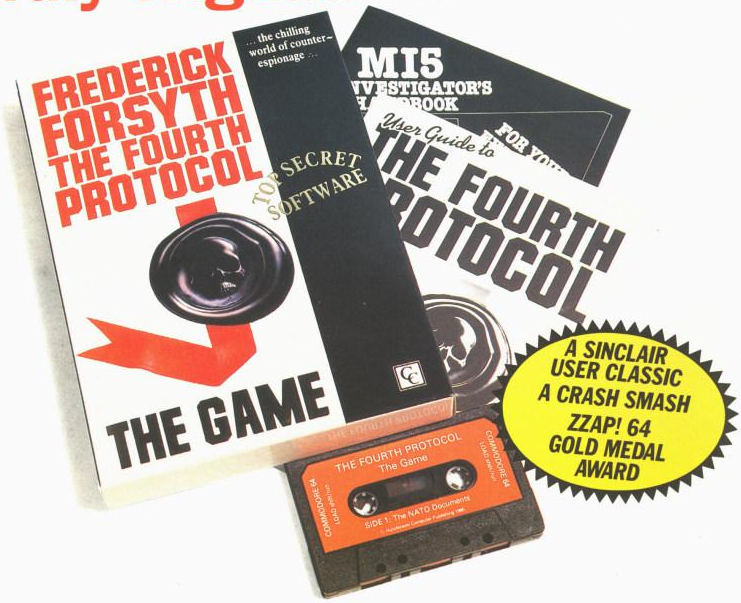
Robcom Turbo 50
10 to Win!

"Destined to become one of the all time classic games" *SINCLAIR USER*

"An absolute joy" *ZZAP! 64*

"A must for adventure enthusiasts" *PERSONAL COMPUTER WORLD*

"Truly original" *CRASH*



After reviews like that, what more can we say?

"I think the best thing to say about this game is BUY IT!" *ZZAP! 64*

Frederick Forsyth's THE FOURTH PROTOCOL — THE GAME is available on cassette for the Spectrum and CBM64 at £12.95 and on disk for the CBM64 at £15.95.
Published by Century Communications, a division of Century Hutchinson Ltd.
Brookmount House, 62-65 Chandos Place, London WC2N 4NW

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Editorial

THE COMPUTER industry is eagerly awaiting the arrival of Commodore's **Amiga** personal micro. As most of you will know from the previews in *Horizons*, the Amiga uses custom chips and established 60000 processor technology to provide an unbeatable combination of speed, power, and flexibility.

Obviously, at a price of around £1500, the Amiga is going to be marketed largely as a machine for professional users. However, used solely for spreadsheet, database and word processing functions it will not be able to achieve its full potential for multitasking, graphic displays, sound generation and interfacing. In the fields of animated hi-res graphics, computer music, video interfacing and so on, the Amiga has such great potential that we can not yet begin to imagine its range.

Commodore desire to recapture the business market has failed once, with the launch of the lacklustre PC; let's hope that having used its commercial muscle to buy the Amiga technology, the company doesn't spoil the machine's chances with its usual approach to marketing.

Next Month

Battle Tactics
Military simulations on the 64

Mastertronic
. . . go into the business sector

Plus
Contests, news and features

EDITOR Christopher Jenkins **PRODUCTION EDITOR** Barbora Hajek **EDITORIAL SECRETARY** Geraldine Smyth **ADVERTISMENT MANAGER** Simon Langston **MANAGING EDITOR** Brendon Gore **PUBLISHING DIRECTOR** Duncan Scot **TELEPHONE (ALL DEPTS)** 01-437 4343 **TELEX** 296275 SUNRGY **UK ADDRESS** Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP **US ADDRESS** Commodore Horizons, c/o Business Press Int'l, 205 East 42nd Street, New York, NY 10017 **SUBSCRIPTIONS** UK £10.00 for 12 issues, overseas surface (excluding US and Canada) £16.00 for 12 issues, US and Canada airlifted US$33.95 for 12 issues.

Commodore Horizons is published monthly by Scot Press Ltd. Typeset by In-Step Ltd, 33-41 Dallington Street, London EC1. Printed by Greenaway Harrison Ltd, Southend-on-Sea, Essex. Distributed by SM Distribution, 16-18 Trinity Gardens, London SW9, telephone 01-274 8611, telex 261643.

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ABC

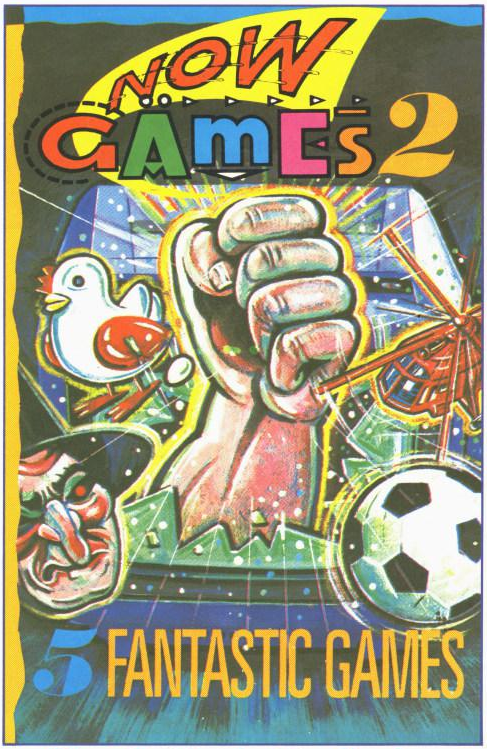
SUBMITTING ARTICLES *Commodore Horizons* invites readers' contributions, either program listings or articles. Articles should be typed, double spaced with a wide margin. When possible programs should be submitted on cassette or disk with a printout on plain white paper. Please keep a copy of your submission — do not send your only copy. Please enclose an s.a.e. if you wish your submission to be returned. All submissions must be your own original work.

Five Fantastic Games

Keep your eyes peeled for NOW GAMES 2. Five major software hits jostle for your attention on this packed-solid-with-fun cassette.

Available for COMMODORE 64 and SPECTRUM 48K and for only

£8.95



1. AIRWOLF – Elite Systems Ltd
Stringfellow Hawke must use his helicopter to free five imprisoned scientists in this exciting arcade game which takes place in a subterranean terrorist base!

2. TIR NA NOG – Gargoyle Games
This remarkable interactive graphic adventure allows you to play the mythological Celtic, Cuchulainn, searching for the fragments of the Seal of Calum.

3. CAULDRON – Palace Software
Take up the witches' challenge and unravel the mysteries of this beautiful land in this striking arcade adventure.

4. CHUCKIE EGG 2 – A & F Software
Help Hen House Harry in the smooth running of the A & F Chocolate Egg Factory! He must find equipment and find out where to use it in this amusing arcade game.

5. WORLD CUP – Artic Computing
This great football simulation lets you re-enact the tough fight to the World Cup Final. Play a friend or the computer (a pretty tough opponent)!

All screenshots from the Commodore 64.

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Mail Merge

Send your letters on software, hardware, computing or life in general to Mail Merge, Commodore Horizons, 12/13 Little Newport St., London WC2H 7PP.

More 64 secrets

ONE DAY I was looking around in my 64 to discover its secrets, and I found one! The secret of eliminating the dreadful "?" in input statements is rather simple. The keyboard has a device number 0, and you can open an input channel to it. Here is a little program which asks your name without using the "?" on the input request.

```
10 OPEN 1,0
20 PRINT "NAME ";
30 INPUT 1, NAME$
40 PRINT
50 CLOSE 1
60 PRINT "HELLO ";
NAME$
70 END
```

Line 10 opens the input channel to the keyboard; line 30 gets the input; line 40 moves the cursor to the next line; and line 50 closes the channel. No questionmarks will appear. You can also open a WRITE channel, but in that case it's easier to use PRINT. Another useful tip is a way to make the computer think you've pressed the RETURN key without touching it — pressing CTRL-M will have the same effect.

Michael Peeters
Mortsel
Belgium

IT'S BRILLIANT little routines like these that make programming so much easier. If any readers would like to see a regular page devoted to such magical tricks, let us know — and send in your favourite programming quickies.

Plus/4 plea

I HAVE recently bought a Plus/4 starter pack and I am finding it difficult to obtain any information and pre-recorded software for this computer. I have some games, but I would like more, and some business software to test my mental agility. Could you give any help?

G A Holden
Hornby
Lancs

THIS IS JUST one of the many letters we've received regarding the Plus/4's software shortage. Some owners fell they have been misled by salesmen into buying a machine with little software support; some bought the Plus/4 when it first came out, and are satisfied with it but regret not waiting until the present price cuts. Clearly there are going to be many Plus/4's "dumped" on the market at Christmas; don't buy one unless you are fully aware of the fact that it is NOT 64-compatible, there is NOT a large software base, and there will probably be little support for machine in the future. Several companies will be producing C16 programs — mainly games — which will run on the Plus/4, and of course the machine can be used with its own built-in 3+1 suite of programs and Commodore disk drives and printers to create a reasonable productivity system. But, apart from the possibility of a slight surge caused by demand for Plus/4 titles after Christmas, there is certainly not much future support for the machine anticipated. We will continue to review any new C16-Plus/4 products.

Handling data

HERE'S A tip for your readers. When you are entering a program with many lines of DATA, nine times out of ten you make a mistake. It's very time consuming and frustrating having to go through the whole lot checking every single data entry. So try typing this line in direct mode (or put it in the program if you like);

```
PRINT(PEEK(64)*256)+PEEK(63)
```

The result is the line number of the data statement containing the error, after you have RUN the program to poke the data into memory.

P Dent
Seaham
Co. Durham

Monitor Moan

I THOUGHT I would offer this tip to readers who have copied the public domain program Supermon from Peter Gerrard's book *"Using the 64"*, only to find that it hangs up with Jim Butterfield's name.

There are five bytes too many at the start of the program. When it is run, and the bytes are stored at the top of RAM, they are all five addresses lower than they should be, with the results that all the jumps in the program are wrong.

The solution is simple; load Supermon then, before running it, POKE 45,235. Then run it, and it will work.

I hope this is helpful to those who, like me, have been struggling with this program!

M D Wilson
Seaford

MARSHMALLOW ALERT! MARSHMALLOW ALERT!
BAIT! YIKES!.. WHERES THAT B-KEY?
CALLING GHOSTBUSTERS!
SUPERCE
THE CITY HAS BEEN DESTROYED..YOU LOSE 4000 DOLLARS, AND THEPLACE IS COVERED IN MARSHMALLOW...
TOUGH LUCK, PRUNEFACE!
© 1985 NMURRAY.. GUT.ELT.

Horizons show packs them in!

THE FIRST ever *Commodore Horizons Show*, at the Tech West Centre, Shepherd's Bush on 26th-27th October, was a great success despite problems with the venue.

Moved from the Hammersmith Novotel due to contractual difficulties, the Show nevertheless drew over 8000 visitors over the two days. With 80 exhibitors, five of whom sold all their stock by midday on Sunday, the Show was packed with new products and bargains.

Susan Phipps, MD of show organisers Editionscheme, commented "Saturday morning was Hell on stilts — not enough phones, the lift didn't work, the fire alarm went off, and some exhibitors were a little hot under the collar! But by 11AM everything was forgiven — we really delivered the visitors."

The Show certainly had something for everyone. On the games front, **Llamasoft's** usual psychedelic display included the latest title, **Batalyx**, plus a preview of **Yak's Progress. CDS** showed their **Colossus Chess** and **Steve Davis Snooker** titles, while **Martech's Crazy Comets**

Intergalactic Robots

proved a popular blast, and not only on their own stand!

Hardware dealers did well too. **Robcom's Turbo Cartridge** and **Head Alignment Kit** did well, as did **H&P's Final Cartridge**, demonstrating screen dumps and various operating routines. **Evesham Micros' Quickdisk+** was another popular add-on, and **Modem House's** communication equipment demonstration was surrounded by crowds, as was **Flightlink's** range of joysticks,

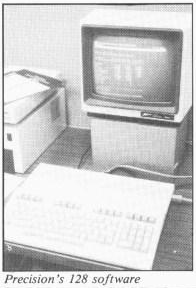
Show of the year

Jeff plays "spot the loony"

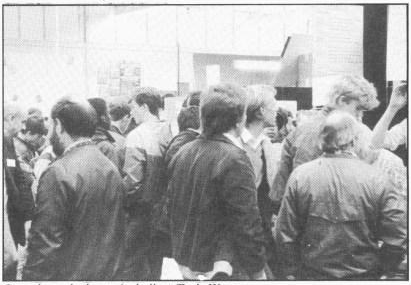
ICPUG seminar

and **Lightwave Leisure's Stick** games controller and peripherals. **Trojan** showed the latest in their popular series of lightpens, the **Cadmaster**, with hi-res graphic software.

Robotics fans enjoyed demonstrations of **Intergalactic Robots'** buggy, and **Memoco's** robot arm for the 64, while prize for the loudest display went to **Syndromic Music's Digidrum** electronic percussion add-on, **SEIL Sound Buggy** and music software. Perhaps the most



Precision's 128 software



Crowds pack the main hall at Tech West

eagerly-awaited hardware was Commodore's own; distributed by Gultronics, the **C128, 1570 disk drive** and **1901 monitor** were on show together for the first time, and on sale at special prices.

Duckworth, Level and **Computer Bookshops** were among those showing the latest Commodore books, while utility software was also strongly represented by **Precision**, with a range including new C128 titles, **Zanine** with their Arabic/ English software, and a wide range of general dealers.

User groups were well represented, with **ICPUG's** stand drawing many subscriptions, and the popular technical seminars leading to some useful discussions (once they were found a room big enough to hold them!)

ICC, the independent **Compunet** users club, put on a fascinating display of the latest facilities on the 'net, including the realtime interactive chatline feature.

Finally, the Sunshine stand, manned by the hard-working staff of *Horizons*, and *Popular Computing Weekly*, dispensed books, magazines, and peace love and harmony in equal amounts. Drawing eager audiences to the stand was Jeff Minter's **Syncro 2** game, as printed in the October issue of the magazine, and its prize-winning competition. On offer were a C128, five disk drives and hundreds of runners-up prizes of books, discount vouchers, and badges. After a feast of joystick-bashing which saw incredible scores being racked up, only to be defeated moments later, the judges have now sorted through the entries and awarded the prizes. If you have not been lucky enough to win, thanks for entering — look out for more great competitions in this issue and issues and come..

Thanks to everyone who made the show such a great success — plans for the next one are going ahead.

REWARD OFFERED

THE SHOW was marred by the theft of a C128 and a 1541 disk drive from the *Commodore Horizons* stand. The equipment was left under the stand on Saturday night, and was found to be missing on Sunday morning.

The power supply for the C128, and the mains lead for the 1541, were left behind — so the thief will have some trouble getting either machine to work, or in selling the equipment.

If you have any information which will lead to the recovery of the C128, serial number EA 0102422, or the 1541 disk drive, we will pay a substantial reward.

Contact Chris Jenkins on 01-437 4343 if you have any information. All calls will be treated in strict confidence.

£79·99. All in.

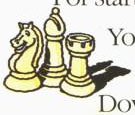
(plus p & p and insurance).

Now you can buy a Communications Modem for your 64 or 128 direct from Commodore at an amazing price.

Just £79.99.

A small price to pay, when you consider what the Modem gives you.

For starters there's everything on the following list:



You can link up with other 64 or 128 owners – swap games, information, send messages, receive replies or just chat.

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Buy the latest software from leading companies at special prices.

Meet friends and foes in MUD the multi-user adventure game.

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Easy to install – plugs straight into a new B.T. socket.

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If you want to get more out of your 64, or 128 by spending less on a modem, please complete the coupon and send to:

commodore

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1 Hunters Road, Weldon, Corby,
Northamptonshire NN17 1QX.

Please rush me a Commodore Modem with a FREE subscription to Compunet.

☐ I enclose a cheque/postal order for £84.94 to include post, packing and insurance (at £4.95).
Make cheque payable to Softpost.

☐ Please debit my Visa/Access card

Access/
Visa no

Name (block capitals please)_____

Signature_____

Address_____

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_____ Postcode_____

Allow 28 days for delivery.
Registration subject to Compunet terms and conditions.
Send to: Commodore Communications Modem, 1 Hunters Road, Weldon, Corby, Northants NN17 1QX.

CH1

*A new style B.T. socket is required. Prestel and Micronet require additional subscriber charges. Prestel is a registered trademark of British Telecom. Micronet is a registered trademark of Telemap.

Useful Impex

IMPEX SOFTWARE has three new utility packages for users of Commodore 64s and printers. **Screen Dumper** is a disk-based utility which resides in an area which does not conflict with most commercial programs. It can be used to produce screen dumps of hi-res screens, including text and sprites, in a number of formats, using the MPS-801 or 1525 printers. Parallel printers can also be used with an intelligent interface.

Font Factory can read any Commodore ASCII file, convert the characters into a new character set, and print out on the 1525 and 801. There are eight new fonts included on the disk, including one which gives the 801 true descenders. Font Factory also allows control over line width, left margin, line spacers, headers, and so on. Included in the package, which costs £19.95, is **Sign Writer 64**, which allows you to print out giant posters.

Lastly, **Fantastic Filer**, complete with **Fantastic Forms**, is an all-purpose data base with menu driven subsections, including search by number or specific criteria, easy editing, deleting or updating of records, mailing label printout, and up to 255 characters per record with up to 15 fields. The average number of records per disk is 1000.

For more information, contact Impex at Metro House, Second Way, Wembley, Middlesex, 01-900 0999. We hope to review the software mentioned soon.

C128 for business?

WITH THE 1570 disk drive and the 1901 RGBI colour monitor at last reaching the shops, Commodore's C128 systems seems to be destined to be promoted as a business package.

At £449 for the C128 and 1570, and £299 for the monitor, the system will be outside the price range of many home users. As more potential customers realise that without an expensive RGBI monitor, the 80 column display in 128 and CP/M modes cannot be used, rival systems by manufacturers such as Amstrad seem to present increasing competition.

Commodore's Chris Kaday commented "After Christmas we will be looking for specific market objectives to get the C128 into small businesses."

The 64, due to be restyled later this year according to some sources, will now be sold as an applications device — one example suggested by Kaday was as a music package, "since the Music Sales synthesiser products we have been marketing are quite brilliant." Kaday also suggested that distribution channels for the 64 may also be altered.

The Amiga is said to be on target for a January 1986 launch, and will probably be shown to the public for the first time at the Which Computer Show in January.

The Yak attack

JEFF MINTER'S retrospective 64 games collection, **Yak's Progress**, is now in the shops. The two-cassette package includes eight games, tracing Jeff's career from the early days of Vic conversions to the giddy height of the Hairy games.

Titles included are **Attack of the Mutant Camels, Matrix, Laser Zone, Revenge of the Mutant Camels, Sheep in Space, Metagalactic Llamas Battle at the End of Time, Ancipital**, and **Hover Bovver**.

Accompanied by a booklet of instructions and historical notes, Yak's Progress is packaged in a giant video case and costs £9.45 on cassette. A disk version at £11.95 will be along in due course.

Contact Llamasoft, 49 Mount Pleasant, Tadley, Hants.

Pan on course

HILL McGIBBON publishers, in association with Pan books, have released CBM 64 cassette versions of their interactive tutorial software.

The **Pan Course Tutors** series includes programs on Biology, French, Maths, Physics, and Chemistry, and each is designed to cover eighty percent of the 'O' level exam syllabus. The test questions printed in the Student Guide are taken from actual exam papers from previous years. Each pack consists of two cassettes, the Student Guide and a paperback book. The software learning modules, accompanied by colourful graphics, take the student through a series of structured questions.

For more details contact Hill McGibbon, 8 Grafton Street, London W1X 3LA, 01-493 7070.

Horizons pin-ups

HOW ARE YOU going to keep your Commodore warm this winter — the answer, of course, is... WRAP YOUR CHIPS IN COMMODORE HORIZONS!

Now you can get a great limited edition 2-inch three-colour badge which tells the world that you read the best Commodore monthly. And to make it easy for you, there's no need to collect silly tokens, make up daft slogans or identify the capital of Botswanaland. ALL YOU HAVE TO DO to get your badge is to find a 50p piece, wrap it up and post it to us at *THE BADGE DEPT, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP.* That will take care of the huge production cost plus postage and packing.

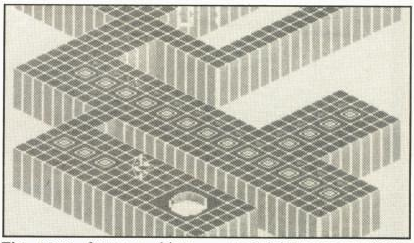
Numbers are limited, so get a move on. Soon you will be able to sneer at readers of lesser magazines as they appear badgeless at the newsagents.

Mad Melbournes

MELBOURNE House's arcade game **Gyroscope** has its CBM 64 version released on November 19th. The game, based on the popular **Marble Madness**, is a colourful and fast-moving test of skill in which you have to guide a spinning gyroscope through a three-dimensional course of ramps, slides, causeways and gulleys. The screen scrolls downwards to follow your progress, and the action is accompanied by sophisticated music and sound effects.

Gyroscope costs £8.95 on cassette and £14.95 on disk.

Also due for release is **Rock and Wrestle**, a follow-up to **Way of the Exploding Fist** by the same programming team.



The game features thirty animated fighting moves done in a humorous cartoon style, ten opponents and a rock music soundtrack. There are one- and two-player modes.

Rock 'n' Wrestle costs £8.95. Reviews of both titles forthcoming; contact Melbourne House at Castle Yard House, Castle Yard, Richmond, TW10 6TF.

Lightwave latest

HARDWARE distributor Lightwave Leisure has announced the latest additions to its range of imported products for the Commodore computers.

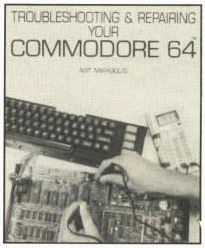
The range includes **The Stick** mercury-switch games controller, the EPROM Blower, motherboards, cables, dust-covers, joystick adaptors and other accessories from the West German company John-Hall.

Lightwave's products range also includes hardware for Atari, Amstrad and IBM machines, and all products are packed with clear, informative descriptions. For more details contact Lightwave at PO Box 23, Wallasey, Merseyside, L44 1EW, or phone 051-639 5050.

Squash that bug

IF YOUR 64 is on the blink and you aren't afraid to open it and poke around inside, John Wiley has just published the book for you. *Troubleshooting and Repairing Your Commodore 64*, by Art Margolis, is a 350-page manual designed to help you to isolate faults, identifying malfunctioning components, and repair your 64 quickly and professionally.

The book, from TAB Books of America, includes sections on disassembling the 64, identifying chips, servicing logic gates, testing input/output ports, checking power supplies, and much more. Each section is accompanied by large, clear diagrams and photographs, and explains the tools needed to

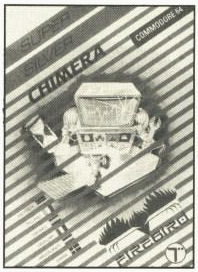


carry out tests, including logic probes, oscilloscopes and continuity testers. Margolis explains that many simple repairs can be carried out using just a soldering iron and a chip extractor.

The book includes master schematics and an index, and retails at £13.30. For more details, contact John Wiley and Sons, Baffins Lane, Chichester, West Sussex, PO19 1UD, 0243 784531.

Firebird is F.A.B.

FIREBIRD'S Super Silver Range has been launched. The new label, featuring games of higher quality than the Silver range at £3.50, includes four titles for the 64; **The Adventure of the Willow Pattern**, an oriental arcade adventure; **Thunderbirds**, a caverns-and-traps game based on Gerry Anderson's popular Sixties science fiction puppet series; **Chimera**, a spacey arcade adventure; and **Chicken Chase**,



a comic action game. The games will be in the shops soon. Talk to Firebird at Weelington House, Upper St Martin's Lane, London WC2.

Accolades for US Gold

US GOLD has signed a licensing agreement with Accolade software of California. Accolade's titles include **Hardball**, a baseball simulation, **Law of the West**, a graphic adventure, and **The Psi-5 Trading Company**, a space trading game with arcade and strategy elements.

The games will be released in series, starting in January. To find out more, contact US Gold at Unit 10, Parkway Industrial Centre, Heneage Street, Birmingham, 021-359 8881.

THE COMMODORE 128.
HARD FACTS ABOUT THE SOFTWARE.

PAZAZZ
Have you ever wished you could create a whole theatrical performance of your own? Do you have your own ideas about scenery, costumes, music, choreography...? Now you have the opportunity to try out your ideas, to experiment with different effects, and to develop a performance that the professionals would be proud of.
Using PAZAZZ you can:
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* choreograph the action.
Four complete performances are included in the package to get you started, after that it's down to you and your imagination. So come on all you budding National Theatre Directors, it's never too soon (or too late) to start.
PAZAZZ
commodore
commodore

PERSONAL MONEY MANAGEMENT
Personal Money Management helps you make the money go round. It is a straightforward, simple-to-use budgeting program for personal finances with which you can control your domestic cash flow and make the most of your income. With Personal Money Management you need never again be caught by the unexpected bill and no money to pay it.
The program is extremely easy to use. You enter your income and expenses, and Personal Money Management calculates your total annual expenses together with the amount you need to set aside each month to meet those expenses. In this way no bill can arrive that you do not have the money to pay, and the money you have set aside is working for you earning interest in a bank or building society account.
Personal Money Management makes planning and budgeting easy, no household should be without it.
MULTI SO
commodore
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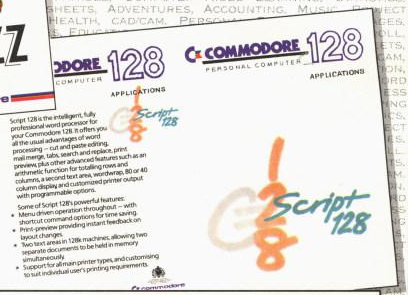
COMMODORE 128
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C128 — THE SYSTEM

***Chris Jenkins** looks at the 1570 disk drive and the future of Commodore's C128*

COMMODORE'S C128 is now firmly established in the home micro market, and along with the 1570 disk drive and 1901 monitor must compete with rival systems such as the Amstrad CPC 6128 and the Atari 520 ST.

So how does the C128 measure up? Obviously, with its three operating modes it has an inbuilt advantage, the choice of CBM64 software, with its unmatched range and power; 128 mode software, with its greater available memory and improved graphics facilities; and CP/M software, which makes available a powerful business operating system.

Prohibitive

The C128 itself is obviously attractive, but critics have pointed out that it needs the 1570 fast disk drive, at £199, and the 1901 RGBI monitor, at £299, to make it worthwhile. The cost of the whole system becomes prohibitive.

The 1570 disk drive is a disappointment after the promise of the 1571. This double-sided device, at £299, seems to have been too expensive for the UK distributors, though it will probably be available in the States.

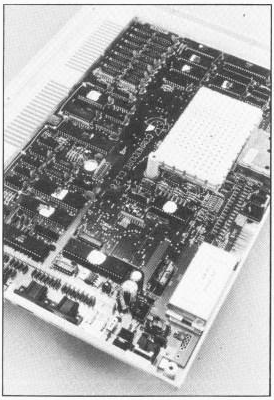
The 1570 retains, to the disgust of most users, the design and sheer bulk of the 1541. Compared to the sleek design of the C128 it appears old-fashioned, though the colour at least matches.

Like the 1541, the 1570 has just an on-off switch, power indicator, data transfer indicator, two serial sockets and a mains lead socket. It's certainly not complex to use, and in C128 mode utilises several advanced DOS commands.

The 1570 can read any CBM64 disks designed for the 1541, but of course in this mode it cannot make use of the extra 1570 features. It automatically shifts to fast mode on initiation of a fast serial transfer from the C128.

The 1570 comes complete with a good manual (for, ironically, the 1571), and a demo disk containing a DOS shell program. This 16K suite of programs can be called up at any time by pressing F1 on the C128, and provides many facilities making disk operations easier, for instance formatting disks, verifying disks to tidy up the block allocation map, and deleting renaming and restoring files. Anyone familiar with the complexities of these routines using the 1541 will be suitably appreciative.

The C128's Basic 7.0 contains many commands which are not available on the 64 and 1541 system. These include advanced VERIFY, SAVE WITH REPLACE, SCRATCH, COPY, RENAME AND CONCAT commands.



To most Commodore users, the world of CP/M will be new and confusing. The 1570 disk drive uses a method called Group Code Recording to record CP/M data, though the more common Modified Frequency Modulation system can also be used. The C128 runs CP/M version 3.0, which is supplied on disk when you buy the micro. However, without an 80-column RGBI monitor, you will only be able to use most CP/M software by using the C128 in 40-column mode and scrolling the screen; not an easy task.

So the major advantages of the 1570 are its use of advanced DOS commands, and its speed — five to ten times faster than the 1541. Of course, this is only of significance when considered in terms of the software available, so what is there for the C128 so far?

Obviously all 64 software will run on the C128, and the temptation for software houses must be to ignore the extra memory and eighty-column capabilities of C128 mode in order to produce products which will still be available to 64 owners.

Most of the "C128-compatible" software so far, then, is just 64 software with a C128 label. but some software houses have made the effort to adapt titles to take advantage of the C128's new facilities.

Micro Swift

Audiogenic's **Micro Swift** spreadsheet for the C128 uses the same pop-up menu system as the successful 64 version. There are some obvious differences, though. For a start, **Swift 128** uses the 80-column display, so you can see twice as much of the spreadsheet at a time, but you will need an RGBI monitor. The program also uses the extra available RAM to give you 44K of free memory.

Since the 128's function keys are not situated as conveniently as those of the 64, the

function key controls are duplicated by the cursor keys, and there are other extra key options. Unlike the 64 version, you can format a cell even when it is empty. Total operating size is 64 columns by 254 rows, and Swift 128 has built-in centronics printer software. At £24.95, Swift 128 will probably be one of the earliest 128 software success stories. Conversions of Audiogenic's other titles are anticipated.

Precision also has a range of C128 versions of 64 originals. Superscript 128 is a combined word processor, spelling checker, calculator and mailmerge program developed from the world-famous **Easyscript**. Featuring simple command sequences, selection by cursor, single-key command sequence entry, block manipulation for cut-and-paste, search and replace, block case shift, up to 240 column width, 30,000 word dictionary, and so on. There's an option to upgrade from EasyScript 64, too.

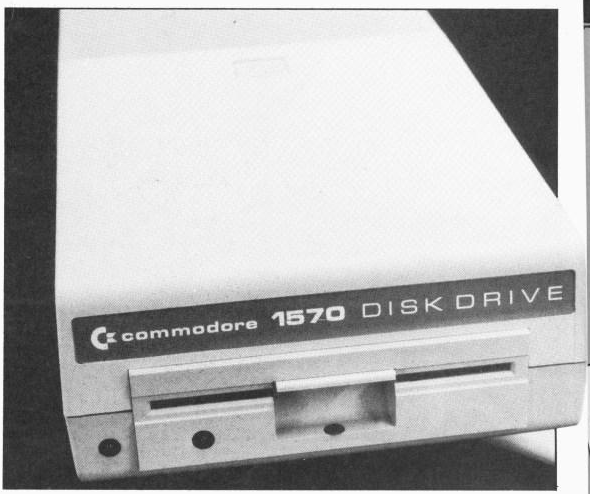
Superbase

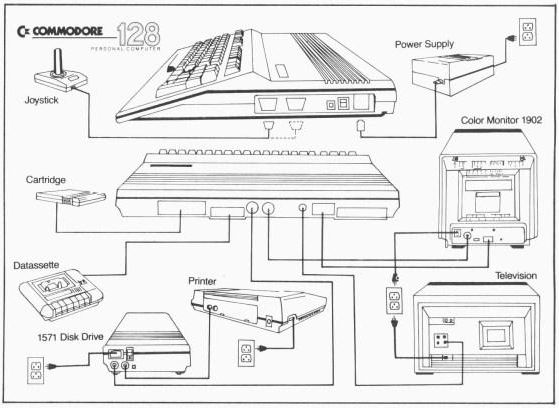
Precision's **Superbase** is another milestone program, now available for the 128. This features up to 15 files per database, with sixteen characters per file name, unlimited records per file, 23 screen lines per file, 127 fields per record, 1000 characters per field, 1107 characters per record, and so on and so forth. What is perhaps most impressive about these two programs is that they can be resident in the 128's memory simultaneously, and can exchange information freely. Obviously, the combined possibilities are enormous. Each program is around the £90 mark, though you may be able to get a special deal on the two together.

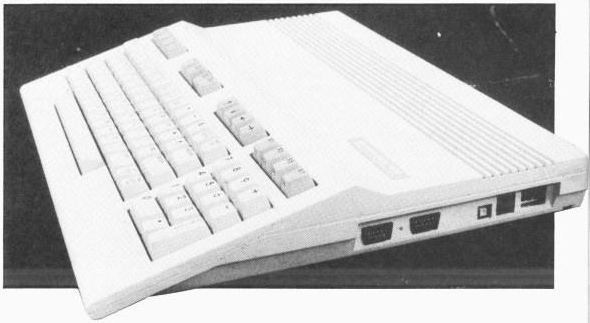
A third respected utility program, **Viza-Write**, has now been converted for the 128 under the name **Viza-write Classic**. At £99.95, you get a pull-down full-function calculator, columnar print-out, spelling checker, proportional spacing, three printer fonts and a customising facility.

Commodore themselves promise **Pazazz**, a graphic "performance" package which allows you to customise music, costumes, scenery and choreography to create your own dramatic performances on screen. Also in the pipeline is **Script 128**, a word processor allowing two documents to be held in memory simultaneously, and **Personal Money Management**, a budgeting program.

So far, C128 software (not counting the expensive CP/M packages, which we will look at some other time) is impressive but thin on the ground. Only time will tell whether the C128, 1570 and 1901 monitor will sell in sufficient quantities for it to merit a more extensive software base.■







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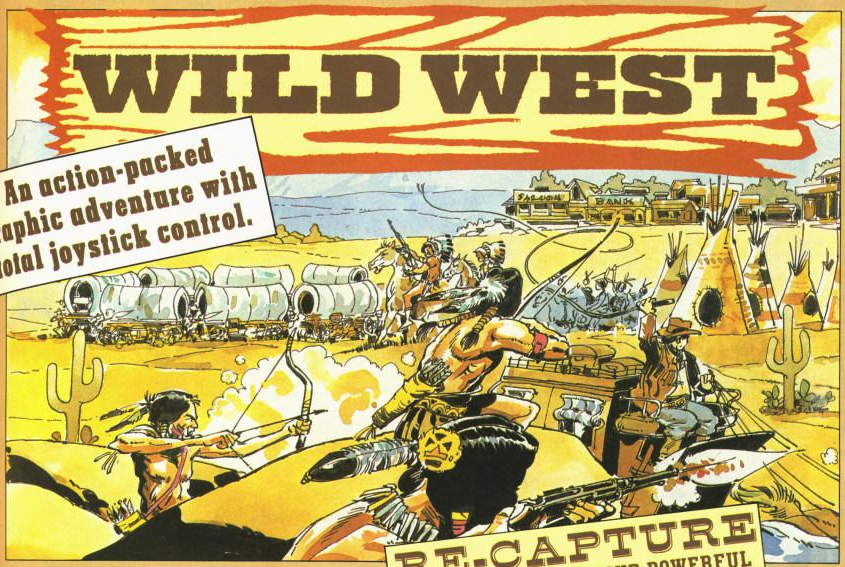

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Egyptian shuffle

Imhotep is a surprising change of direction for Ultimate. Unlike the **Karnath/Entombed/Blackwych** arcade adventures, this one appears to be a straight shoot-'em-up, bought in rather than written in-house.

At the wise Egyptian Imhotep, you must make a perilous journey to find the Books of Ra, which alone can restore the ebbing waters of the life-giving Nile.

Unfortunately, though the insert gives the usual Ultimate list of goodies — catapults, gremlins, secret tunnels, invisible steps, ambushes and so on — the game is so difficult that it's impossible to give it a fair review. In the first stage you guide Imhotep's eagle through the air, avoiding or shooting down enemy vultures. In the second

stage thunderbolts are added to the dangers. The scrolling backgrounds are pretty and the sprites move intelligently, but despite frantic joystick-wielding I could not progress to the later stages, where the instruction hint that the action becomes something more than zapfest.

Certainly something new for Ultimate — but perhaps not what people would anticipate.

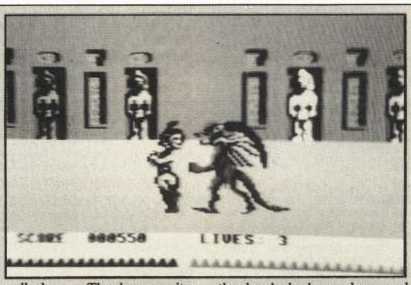
Program: Imhotep, 64
Supplier: Ultimate
Price: £9.95
Graphics: ★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★

Demonic

A sequel in concept to the sublime **Way of the Exploding Fist**, Fighting Warrior again presents two sprites bashing each other senseless against an exotic background.

In this case the setting is Egyptian — seems to be the in thing at the moment — and you are a champion warrior on a quest to rescue a beautiful princess (aren't there any plain princesses?)

The backgrounds aren't as detailed as those in Fist — largely sand — though the pyramids and mununents are



well drawn. The large sprites move convincingly, giving each other painful-sounding wacks to the head, body or legs, and leaping or ducking to avoid blows. At the bottom of the screen a gauge shows your remaining strength.

The enemies are extremely varied, ranging from the minotaurs to hounds and a wonderfully horrific winged demon. Each has its own style of fighting, and you must defeat one of each kind to succeed in your quest. Mystic bottles offer some magical help along your way.

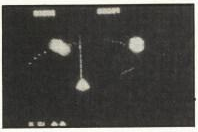
Excellent violent fun.

Program: Fighting Warrior, 64
Supplier: Melbourne House
Price: £8.95
Graphics: ★★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★★

Blast off

It's some time since we've seen a good conversion of an established arcade game; well done, they always give a good deal of pleasure, though if done badly they tend to be a pain in the bum. I'm pleased to say the **Crazy Comets** is a decent version of **Mad Planets.**

You control a spaceship which is assigned to destroy unstable planets before they lead to an



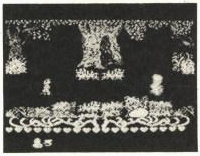
uncontrollable collapse in the structure of space. Armed with the usual laser-phaser-neutron-zapper, you dash around the screen blowing away planetoids before they grow in size and chase you around the universe.

Excellent sprite handling, with the full-sized planets developing their owning circling moonlets, each of which has its own shadow., The usual 1 or 2 player options, bonus lives, extra points for picking up space capsules, and ace music (by the same programmer responsible for **The Last V8?**). Not a perfect copy, since on the original you could spin the ship around to any angle; but a great blast nonetheless.

Program: Crazy Comets, 64
Supplier: Martech
Price: £8.95
Graphics: ★★★★★★
Sonics: ★★★★★★★★★
Gameplay: ★★★★★★★

Robin them blind

Very reminiscent of **Sabre Wulf**, Robin of the Woods is graphically attractive and generally slick and polished. As Robin, without merry men, you run through the forests and castles of Nottingham in search of the sacred arrows you need to compete in the archery tournament. Quivers of arrows



are hidden around the forest, but they are often guarded by witches. You must collect woodland flowers to reward the witches, and watch out for the hermit who can cure you if you are near death.

Injury is caused by encounters with Norman guards, who you can rap over the head with your staff, or hedgehogs. Hedgehogs?!

The sword and bow are in the keeping of a forest Ent, and to pay for them you need to hand over bags of gold, before going on to compete in the tourney.

Robin is well animated with flowing hair and tastefully-cut jerkin.

Complete with mediaeval music, Robin of the Woods is a nice effort, though clearly derivative of a number of successful titles.

Program: Robin of the Wood, 64
Supplier: Odin
Price: £9.95
Graphics: ★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★

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Good with numbers SuperScript allows you to extend your editing line up to 250 columns for wide documents like financial statements, and with decimal tabs it's easy to enter properly justified tables of numbers.
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Good with spelling, too The built-in spelling checker goes right through your text, checking for errors. You have the option to correct any error, ignore it, or add the word to its 30,000 word dictionary.

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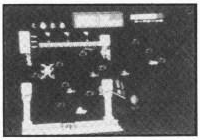
Leaping about

Dynamite Dan may be, I hope, the last of the dying breed of ladders and platforms efforts. Very well programmed, with some excellent sprite effect and sonix, it nonethisless offers nothing we haven't seen in hundreds of Manic Weeblies lookalikes.

Secret Agent Dan has to find



six sticks of dynamite (try saying that after half a weak larger shandy too many), in order to open the save of Professor Blitzen and retrieve some stolen documents. It's the usual left-right-jump business, with useful objects such as food, credit cards, test tubes, oxygen, and deodorants (deodorants?!) being guarded by hordes of flongtopuses, grollixes, snarglers and booglies. Trampolines and springboards help you along the way.

Decent classical music, (well, it's cheaper I suppose), a funny death sequence and good sound effects make DD a tolerable leaper-and-bounder if that's what you're after.

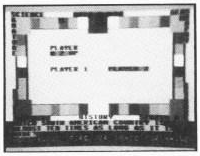
Program: Dynamite Dan, 64
Supplier: **Mirrorsoft**
Price: £6.95
Graphics: *******
Sonics: *******
Gameplay: ******

Quiz time

After the disappointment of US Gold's **Monster Trivia** — so American it smelled of pretzels — it's nice to see that Anirog has managed to produce a much more playable version of the game **Trivial Pursuit**.

The questions in this family quiz are divided into six categories — Entertainment, History, Sport and Leisure, Geography, Arts and Literature, and Science and Nature. There are four blocks of questions included in the double cassette pack, with 1400 questions in all.

The game is played on a representation of a board; the computer throws the dice for each player, and presents a question depending on what colour square you land on. You don't type you answer in; just shout it out, then press the space bar to see if you're correct!



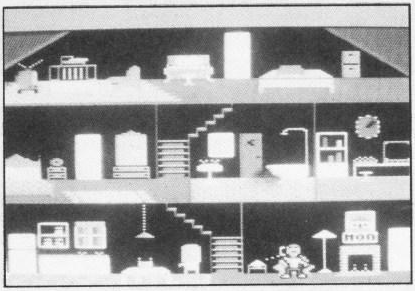
Two to four can play, and the package includes a routine allowing you to enter you own questions. Those I came across are pitched at very good level — just the sort to make you say "I know it! It's on the tip of my toungue!" A good Christmas buy, I would have thought.

Program: Trivia UK, 64
Supplier: **Anirog**
Price: £8.95
Graphics: ★★★
Sonics: ★★★★
Gameplay: ★★★★★★

Invited guest

The Little Computer People research project, has, for the first time, explained all those mysterious micro bugs and glitches. Yes, there are people living in your computer — and this program helps you to find out all about them.

One of the most original ideas of the year, the Little Computer People program creates a house on the screen of you 64, and with any luck an LCP will move into it. You'll soon discover that each LCP has his own name and distinct personality; you can watch the LCP's dance, play the piano, watch TV, make phone calls, feed the dog, go the



bathroom — everything real people do.

The program really becomes fun when you communicate with the LCP, playing poker, leaving presents at the front door, making sure he has enough food and were in the larder (otherwise he'll turn green and lie in bed all day), and getting him to type messages to you.

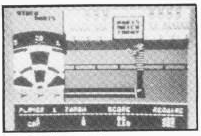
Written by a team headed by David **"Ghostbusters"** Crane, this package is technicaly excellent and lots of fun — typically American, coming complete with a deed of house ownership and an LCP magazine or poster. You won't want to switch it off.

Program: Little Computer People, 64
Supplier: **Activision**
Price: £9.99 cass, £14.99 disk
Graphics: ★★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★ ★

Double top

Difficult to know quite what to make of this one; I have a soft spot for it, though I couldn't give a logical reason why.

Opening with an animated sequence of a jolly darts player staggering into the pub, Video Darts has a sort of cartoon feel to it which I find quite



endearing. There are two versions of the game on the cassette, one for playing against the micro and one for two players. In each case the playing screen divides into two areas; a display of a slice of the dartboard, and a picture of the player standing against the bar. Moving the joystick right and left rotates the board to the desired position. You then place a cursor over the section you wish to hit. The player's hand waves back and fore; you try to press the fire button when his arm is in the forward position, and the dart either flies true or goes wild. The scoreboard shows you achievement and the computer takes its go, until one or the other wins.

That's all there is to it; I can't really explain why I like it!

Program: Video Darts, 64
Supplier: **Zion**
Price: £7.95
Graphics: ★★★★★
Sonics: ★★★
Gameplay: ★★★★★

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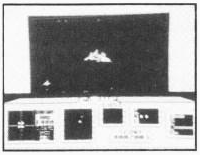
'Mazing

Apologies for concentrating so much on Mastertronic games this month, but if they bring out so much good stuff, who are we to ignore it. There's an amazing amount crammed into **Space Hunter**; none of it that original, but all good fun.

The main section is a sort of space flight simulator, in which you must use your tracking computer to locate food transporters. The display screen gives a good impression of movement as you rush through the universe with one eye open for space pirates.

Having located a ship you rendezvous with it and transport aboard. You must now search



through the maze-like internal passages on your jetbike, looking for food and fuel. Various aliens block your way.

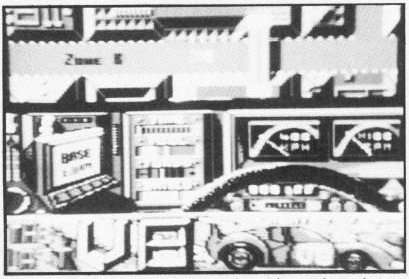
A little short on instructions, this one, but a nice combination of styles and good at the price.

Program: Space Hunter, 64
Supplier: Mastertronic
Price: £1.99
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★

Mad Max mission

First of the new Mastertronic Added Dimension games at £2.99, **The Last V8** is still a terrific bargain. It's a sort of post-apocalytpic **Give my Regards to Broad Street**, with a four-way scrolling map, and various data readouts on the control panel of your 410kph V8 racer.

Exploring the post-holocaust world, you are informed that a delayed action warhead is about to be detonated. With only minutes to go, you must steer



you car through the wreckage to return home base. You have to drive at breakneck speed to arrive on time, and even then you face the hazards of radioactive waste which will eat through your shielding if you delay.

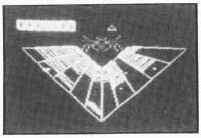
The map display is excellently detailed, and the gameplay compelling and frustrating. It will take ages to master steering the car, so for sheer playing value this game probably represents the best purchase for some time. Accompanied by decent speech synthesis and absolutely astounding music, this game is winner of this month's "drop whatever you're doing and dash out to buy it" award.

Program: The Last V8, 64
Supplier: Mastertronic
Price: £2.99
Graphics: ★★★★★★★
Sonics: ★★★★★★★★★
Gameplay: ★★★★★★★★★

Insect killer

I think this is based on an arcade game called **Tempest**, but having never played the original I'm not qualified to compare it on those grounds. **Axis Assassin** is one of Ariolasoft's "budget" titles, and is a fairly good blast though it isn't much to look at.

The game grid recedes into the



distance, and along it swarms a horde of insectoid killers. You move your Assassin along the forward edge, firing down the grid lines to destroy the insects and reach the Master Arachnid, a menacing giant spider.

There are various kinds of enemies, some fast moving, some traplaying, some coming in pairs, but all deadly if they reach you. You have only your blaster and a limited number of Pulse Bombs, each one of which can clear a web. There are over 100 different webs to master, and a Nest screen where you can try to free your captured companions.

Not bad, but slightly spindly graphics and a general lack of strategic ramifications.

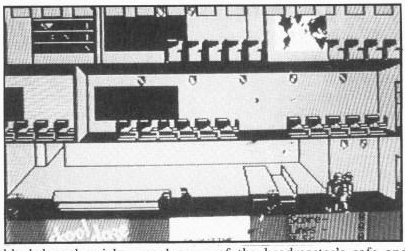
Program: Axis Assassin, 64
Supplier: Ariolasoft
Price: £9.99
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★

How to be Topp

This is a conversion of Spectrum program which was very well recieved at the time of its release, and the 64 version compares well.

A jolly romp set among the classrooms of a typical educational establishement (in other words, a cross between Colditz and Wormwood Scrubs), SkoolDaze features very clever animation and character interaction.

You can hit other characters, use a cataplult, write on



blacksboards, pick up and use objects, and interact with characters in you quest to find the numbers in the combination of the headmaster's safe and retrieve you rotten report.

To do this you have to ht shields mounted on the wall with your catapult, attack teachers, climb on your classmates and so on. It's jolly good fun.

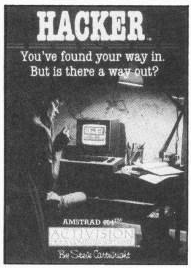
to make life more difficult you must follow the scrolling messages telling you which class to attend and reminding you of the school rules, other wise you'll be given lines to write. Animation and sound good; top-notch studd, chaps.

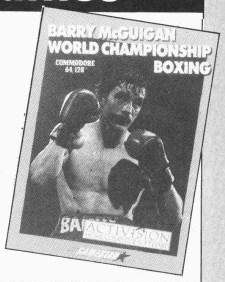
Program: Skooldaze, 64
Supplier: Microscrosphere
Price: £6.95
Graphics: ★★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★★★

Charts

Top Twenty CBM 64 Games

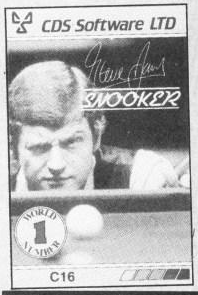
1	(11)	Spy vs Spy 2	Beyond	£9.95
2	(3)	Frank Bruno's Boxing	Elite	£7.95
3	(1)	Summer Games 2	Epyx/US Gold	£9.95
4	(4)	Way of the Exploding Fist	Melbourne House	£9.95
5	(NE)	Who Dares Wins 2	Alligata	£7.95
6	(2)	Sky Fox	Ariolasoft	£9.95
7	(6)	Barry McGuigan's Boxing	Activision	£9.95
8	(8)	Karateka	Ariolasoft	£9.95
9	(5)	Beach Head 2	Access/US Gold	£9.95
10	(9)	Blackwyche	Ultimate	£9.95
11	(NE)	Paradroid	Hewson Consultants	£7.95
12	(NE)	Hacker	Activision	£9.99
13	(10)	Wizardry	The Edge	£9.95
14	(7)	Now Games	Virgin	£8.99
15	(14)	Kik Start	Mastertronic	£1.99
16	(20)	BMX Trials	Mastertronic	£1.95
17	(12)	Action Biker	Mastertronic	£1.99
18	(16)	Pitstop 2	Epyx/US Gold	£9.95
19	(13)	Elite	Firebird	£14.95
20	(18)	Finders Keepers	Mastertronic	£1.99





Bubblers

1	Monty on the Run	Gremlin Graphics	£9.95
2	Excaliba	Mastertronic	£1.99
3	Terrormolinos	Melbourne House	£8.95
4	ACE	Cascade	£7.95
5	Blue Max 2001	Synsoft/US Gold	£9.95



Top Five CBM 64 'Non-games'

1	Mini Office	Database	£5.95
2	Music Studio	Activision	£12.95
3	Make Music with Mastertronic	Mastertronic	£1.99
4	Quill Adventure Writer	Gilsoft	£14.95
5	Azimuth 2000	Interceptor	£8.99

Bubblers

1	Maths	Longman	£14.95
2	Machine Lightning	Oasis	£29.95
3	Programming with Gortek	Gortek	£14.95

Top Five C16 Games

1	(1)	Formula One Simulator	Mastertronic	£1.99
2	(4)	Squirm	Mastertronic	£1.99
3	(3)	BMX Racers	Mastertronic	£1.99
4	(2)	Daley Thompsons Star Event	Ocean	£6.95
5	(5)	Spectipede	Mastertronic	£1.99

Bubblers

1	Vegas Jackpot	Mastertronic	£1.99
2	Air Wolf	Elite	£6.95
3	Steve Davis Snooker	CDS	£6.95

Top Five Vic 20 Games

1	(1)	Crazy Cavey	Mastertronic	£1.99
2	(2)	King Tut	Mastertronic	£1.99
3	(4)	RIP The Game	Mastertronic	£1.99
4	(3)	Rockman	Mastertronic	£1.99
5	(NE)	Vegas Jackpot	Mastertronic	£1.99

Bubblers

1	Psycho Shopper	Mastertronic	£1.99
2	Doodlebug	Mastertronic	£1.99
3	Hektik	Mastertronic	£1.99

Data compiled by Gallup from a panel of specialists and chain stores, for the month ending November 7th

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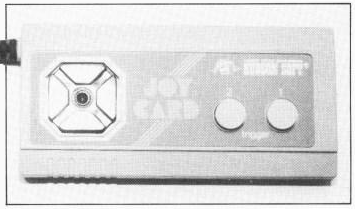
WEIRD JOYSTIC

*Games controllers aren't all exactly the same, and some are so unusual they can't even be described as "joysticks". **Louis Buchalter** assesses the most eye-catching*



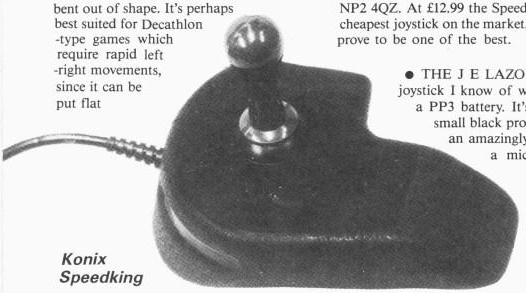
Hudsonsoft joycard

● JOYSTICKS DON'T have to be boring, you know — they're not all black, plastic widgets with one fire button, a handle, a base you can't fit you can't fit your hand around, and a length of cable. Even though they all end up plugged into the same port in your 64, Vic, C16 or Plus/4, joysticks are NOT all the same...

Let's look at some of the more eccentric joysticks on the market — the ones which can offer an unfair advantage on those tricky maze games, or give you a faster blast or an extra long life.

Firstly, the **Hudsonsoft Joycard** is unusual because it doesn't have a "handle", "base" or "fire button" as such at all. It's about the size of a credit card, (well, a large credit card), a centimetre thick, and has the usual cable and plug leading from the left hand side. The direction controllers is a squarish pad which is operated with the thumb. You rock the pad in the required direction to register a move, and press the fire buttons on the right hand side of the Joyscard with your other thumb. In other words, it isn't much good for people who don't have any thumbs.

The Joycard is virtually indestructable, since there is no pivot points which can give way under pressure, and no contact switches to get bent out of shape. It's perhaps best suited for Decathlon -type games which require rapid left -right movements, since it can be put flat on a table and operated with your forefingers. Having two fire buttons is handy too, though not as helpful as having an auto-fire option.



Konix Speedking

● THE KONIX Speedking is one of the most intelligent, if odd-seeming, joystick designs on the market. It's one of the few to take into account the fact that most players do not stick the controller to the table while playing, but hold it in one hand while manipulating it with the other. The Speedking is designed to fit neatly in the palm of you hand, while your fingers curl around the body and your index finger rests on the long fire switch. So, unless your hands are amazingly small or large, the Speedking is easily the most comfortable joystick you can buy.

Just to make it even better, the short, vertical shaft has a small knob on the end, rather than the ridiculous huge ball found on some joysticks. The Speedking also features microswitch control both of the shaft and the fire button. This gives a very precise switching action, better than the leaf-switch arrangement of most joysticks, and is also very durable. Since the click of the microswitches in operation is clearly audible, it's also a great help to game play. There are left-and right-handed version available, though you may well have to contact the manufacturers directly to get hold of one; Konix Computer Products, Unit 13, Sirhowy Ind Est, Tredegar, Gwent, NP2 4QZ. At £12.99 the Speedking isn't the cheapest joystick on the market, but may well prove to be one of the best.

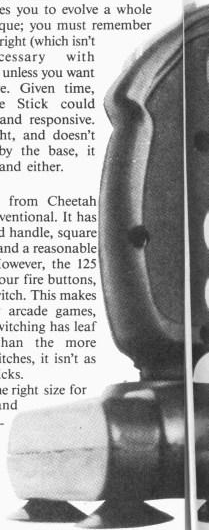
● THE J E LAZOR is the only joystick I know of which requires a PP3 battery. It's housed in a small black project box, with an amazingly long cable, a microswitch fire button on the end, and a sliding on -off switch at the side. On the top is a red LED which tells you when it's switched on, and five studs; four pyramids arranged in a diamond shape, and a circular one in the centre. These are the principal gimmicks; they're simply metal contacts which react capacitatively to the touch of your fingers. Now, in theory this means fast switching and speedy reaction; but in practice the Lazor seems skittish and difficult to use, and the small fire button is plain painful.

Perhaps this just means it takes getting used to, but it seems to me that unless you have fantastically clean pinkies and a great deal of self-descipline, you'll end up all over the screen with this one. At £18 it seems an expensive gimmick.

● ANOTHER joystick which looks as if it has vital bits missing; The Stick from Lightwave Leisure. This one is much more ingenious that it looks, since the lack of a base is not a manufacturing blunder, but a matter of choice; like the Speedking, the Stick is designed to be held in the hand rather than stuck to the table (although there is a detachable sucker.

The Stick is actually operated by tilting it in the required direction — forward, back, left, right. The body contains mercury-filled capsules. The top and front fire buttons are conventional in comparison.

The Stick requires you to evolve a whole new playing technique; you must remember to keep the thing upright (which isn't of course necessary with conventional sticks) unless you want to register a move. Given time, playing with The Stick could become very fast and responsive. Because it's so light, and doesn't need to be held by the base, it doesn't tire your hand either.



● THE LATEST from Cheetah looks boringly conventional. It has the usual contoured handle, square base, four suckers and a reasonable length of cable. However, the 125 has no fewer that four fire buttons, plus an auto-fire switch. This makes it ideal for zappy arcade games, though since the switching has leaf switches rather than the more expensive microswitches, it isn't as precise as other sticks.

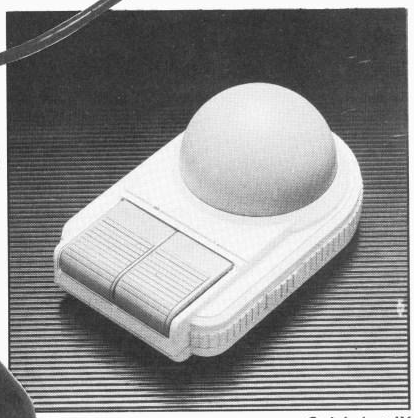
The grip is just the right size for the average hand, and comfortably contoured. On the top is a long, wide thumb button with a very stiff action, while on the front of the

ICKS

grip is a trigger-style button which is lighter in action. On the base are two circular fire buttons, situated to suit either left- or right-handed players. Between them is the sliding auto-fire switch. This works in an odd way; when engaged, the stick fires continuously whether the fire button is held down or not. I prefer sticks where the auto-fire option only works when the button is held down.

Overall the 125 is a good standard stick, easy to use and offering a wealth of firing options; but it is not the ultimate stick by a long chalk.

Lazor


Quickshot IX

The Stick

● SPECTRAVIDEO's Quickshot series becomes progressively more eccentric! The latest batch of designs — some of which, admittedly, may never make it into the shops in this country — includes some well weird models.

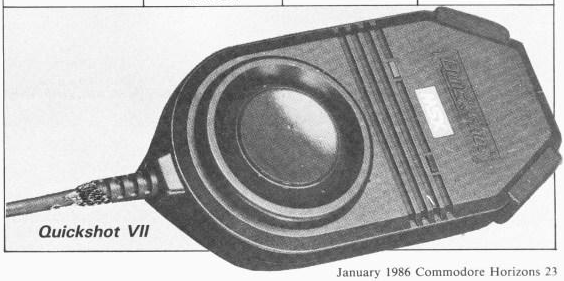
The Quick IX looks very impressive. It's a cross between a joystick and a trackball, in effect, and looks like some sort of space vehicle from **2001: A Space Odyssey.** In a cream case with two large, square light grey buttons, the IX features a large spherical controller called the Joyball. This ball is the size of your hand, and is pivoted in the required direction by pressure rather than by twisting the wrist. Both fire buttons have auto facilities, and there are two LEDs to indicate their status.

The Quickshot IX series boast of fatigue-free operation, precise response fast reaction. It will be interesting to see this revolutionary product when (if!) it appears on the UK market.

● SPECTRAVIDEO'S other unusual contender is the Quickshot VII. This is another form of Joycard; small, thumb-operated and practically unbreakable. There's a small, touch responsive circular control pad, two fire buttons, and two status LED's. Both fire buttons have auto capability.

There's also the Quickshot IV, a fairly conventional joystick with four suckers on the base, fire buttons on the base and stick, and a range of three interchangeable grips; Fighter, Sportsmen and Racer, each with different grip designs to suit different types of game. Again, it will be interesting to have a closer look at these when they become available, and see how they measure up to the opposition. ■

JOYSTICK	ACCURACY	DURABILITY	EASE OF USE
Hudson Soft Joycard	7 A little hard to achieve diagonals	10 Should last for ever	7 Will take some practice
Konix Speedking	9 Very precise, good at diagonals	8 Seem fair, though casing looks cheap	10 Very comfortable, very straightforward
J. E. Lazor	5 Difficult to move precisely	10 Indestructable	5 Tricky to master
The Stick	5-9 Needs lots of practice	9 Should last forever	5-9 Feels good, but takes patience
Cheetah 125	8 Very good, though not as good as microswitch devices	6 Could be more strongly constructed	9 Very acceptable


Quickshot VII

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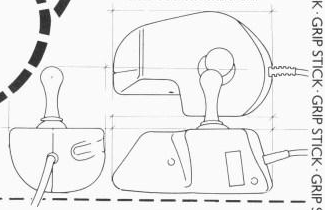

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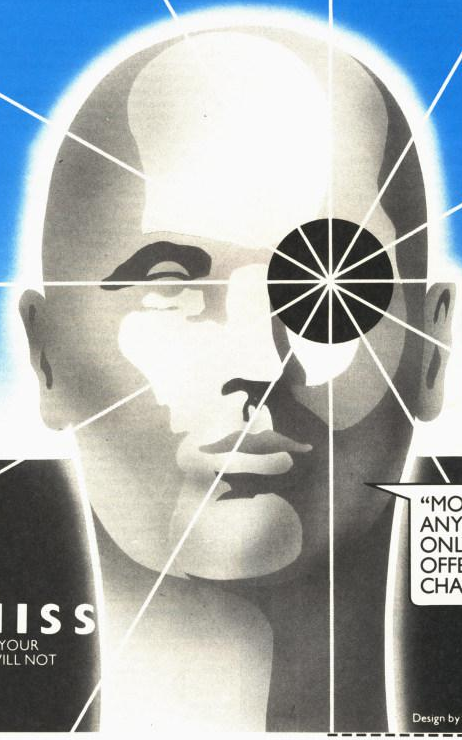

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Each command is a single word, and for each command there's an extra line of helpful description. To select a command, you simply move the cursor. You don't even have to type the command!
Once you are more familiar with Superscript, you can bypass the menus.

Powerful for the experienced user

Superscript also gives you the ability to *cut work down to a minimum* by storing your own command sequences or text on single keys. This means that with a single keystroke you can reproduce commonly used phrases or multi-line addresses from a glossary, load in document formats or execute a pre-programmed sequence of operations. *That's intelligence!*

Editing options

Superscript gives you all the editing options of a business-style word processor, with full block manipulation for cut-and-paste; overtype or text insertion modes; search and replace with pattern matching and optional case discrimination; backward search; case shifts for single words or larger blocks of text. *And much more.*

Good with numbers

Superscript allows you to extend your editing line up to 240 columns for wide documents like financial statements, and with decimal tabs it's easy to enter properly justified tables of numbers.
Superscript's complete set of calculator functions can be used interactively, or you can operate on numbers from the text of your document. Apart from the usual mathematical functions like add, subtract, multiply, divide, and percentages, you have the ability to add rows, columns or even whole tables.

Good with spelling, too

The built-in spelling checker goes right through your text, checking the unique words against its dictionaries, and stopping at each one it does not recognize. You have the option to correct the error, learn the new word or ignore it. Superscript has its own 30,000 word dictionary. In addition, it stores new words as it learns them.

Mailings with Superscript

Personalized mailings are easy with Superscript. You can enter the data manually or use data extracted from your spreadsheet or database. Merging can be selective with equal-to / not-equal-to logic. A mailing labels template is included to help you complete your mailing and you can alter the template to suit your own label format.

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Easy to use –

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AS THE mechanic helps you with the straps on the four-point harness and gives you that confident thumbs up, you start to feel nervous. Sweat drips down the side of your head, encased in the full face helmet.

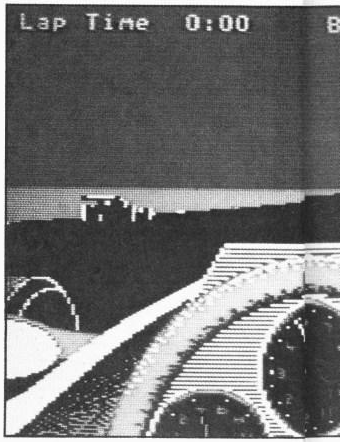
Suddenly the cockpit starts to feel more like a coffin. Your first time out in a Ralt Formula Three racing car. Check neutral — OK. You pull the starter and the engine jumps into life... rev it up a bit (you don't want to stall and embarass yourself do you?) and slip it into first. Whoops — rather too much wheelspin — but suddenly you are out of the pits heading towards Copse Corner, and in fourth clocking one hundred miles per hour plus before you know it. Pass the 100 metre board and throw it into the 90 degree right-hander with the right foot still down. You made it through, so it's up the rise towards Maggotts. Change up and take it flat out. Now you're moving!

Admire scenery...unaware that Becketts is nearly upon you. Break late...change down to third, but you're into the corner and way off line. Desperately you swing the wheel, but you're already on the grass and spinning into the welcoming arms of the catch fence. Only too aware of the fire hazard (even

available from Firebird (priced £14.95 on tape and £17.95 on disk) and I'm pleased to report it's just about as good as the original...with the addition of the choice of two tracks as standard, the usual Silverstone, plus the extra of Brands Hatch. More of this later, but first of all let's examine exactly what you get for your money.

Firebird have learnt well from Acornsoft that the best way to sweeten the psychologically bitter pill of paying near on fifteeen quid for a relatively small length of cassette tape is to put it in a big box, along with a requisite number of manuals and posters. Revs is no exception, but with a program like this one, it's well worth the investment in time and effort to read the bumf before driving off into the sunset — or more likely the catch fencing. You can do this while loading up the lengthy program.

The first thing you are asked for is to choose the track you would like to race/practice on. My advice would be to choose Silverstone to start with — it's got fewer corners and hills, more straights, and is generally easier to learn on. You will now be asked to choose your playing options...practice, or race. Let's try practice



REVS

*Brands Hatch veteran **John Cook** compares Firebird's racing simulation to the real thing, and finds the game just as nerve-wracking*

though it's only four-star in the tank,) you struggle with harness and leap out of the cockpit...only to knock over the coffee table. In turn, other members of the family and/or people you used to consider your friends leap at the keyboard of your Commodore to take their turn around Silverstone, while you retire to the pits to raid the fridge.

Addictive

Crazy? Fanciful? Well, **Revs** gets you like that; certainly it is one of the most challenging and addictive programs you are lightly to come across this Christmas.

Originally written for the BBC B by Geoff Crammond (also Author of that Beeb biggie **Aviator**), Revs was rightly huge for Acornsoft over the summer, staying in the top three for weeks on end. For a time, however, the obligatory Commodore conversion seemed uncertain — after all, the one thing Commodore owners certainly aren't short of are racing games. **Pitstop, Pitstop II, Taledega, The Great American Road Race, Racing Destruction Set**, the list is almost endless. So why flood an already saturated market with another title? The secret is that Revs is not 'a game' with playability as the first design priority. It is first and foremost a simulation of what it is like to control a race tuned Formula Three car and an opportunity to try it out under race conditions. In fact, everything a budding racing driver could ask for — except maybe a car!

The Commodore version (again written by the venerable Mr Crammond) is now

first shall we Sterling?

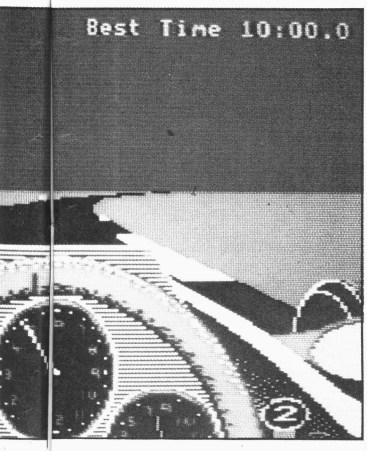
On choosing this option, you are asked for front and rear wing settings. Wing settings on a car? In fact, these are the aerofoils which produce the 'downforce' that allows these cars to corner at three figure speeds. (To guage their effect, try racing with a setting of 0,0 some day). Racing settings themselves vary from person to person. Geoff Crammond recomends 37,33 as a good general purpose setting, while David Hunt uses 39,31. The general rule is, the

higher the setting, the greater the downforce, and therefore the greater the cornering speed. The lower the settings, the higher the straight line speed.

This over with, you find yourself looking out of the cockpit, just on Abbey Curve looking towards the chicane at Woodcote. The controls shown within the car are simple. Central on the panel is the rev counter...vital to keep an eye on this one as the engine produces most power between 5000 and 5800 revs. If you fall below the magic 5000 then you're in the wrong gear! Below and to the left and right of the rev counter are the water temperature and oil pressure guages. To all intents and purposes, these can be ignored...you'll usually have your mind on much more important things...like staying on the road. The upper half of the steering wheel encompasses the instrument panel — it has a black "second hand" which moves round its circumference to show how far over you are currently steering. To the right of the steering wheel you'll find the gear lever, showing which gear you have currently engaged. You have a choice of five forward and one reverse. Finally, you are equipped with left and right wing mirrors — very important when racing, but as you have the track to yourself during practice, don't worry about them right now.

Controls

Now you are ready to start to learn how to drive your Formula Three car. Well... almost. First ask yourself that most penetrating of questions...are you a keyboard man or a joystick man? Or a paddle man? Yup, you aren't short of control choices in this game, as various combinations can be chosen (via the function keys) to accommodate the keyboard control (S/Throttle, A/Brake, Q/Change up, Ctrl/Change down ,steering via ';' and ':' keys — my own favourite), keyboard throttle/gear control with steering via the Commodore games paddle, switched joystick controlling throttle/gear with steering via



GAME:	**Revs**
MICRO:	**CBM64**
PRICE:	**£14.95, £17.95 disk**
SUPPLIER:	**Firebird**

paddle and finally analogue joystick. As far as I'm concerned, no one is better than any other — use whatever is most comfy for you.

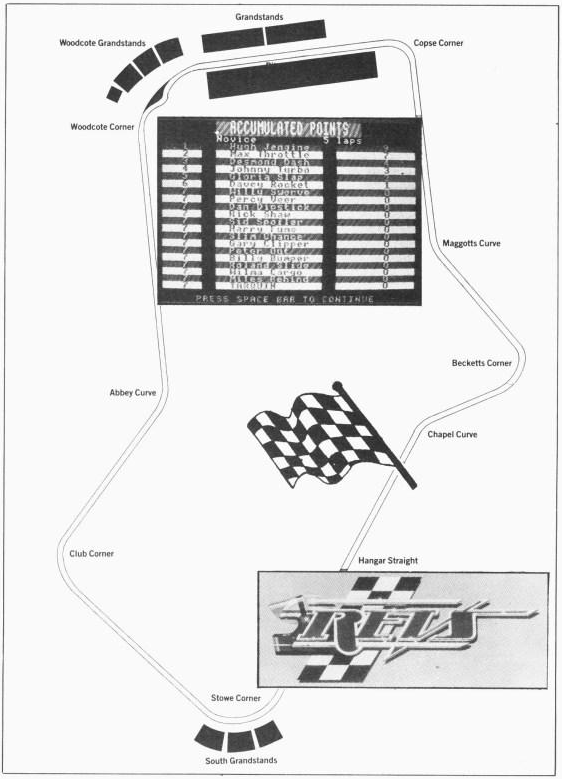
Having got all that sorted out, press the starter (T) and wait for the engine to fire. Use the throttle to pick the revs up to 5000 or so and engage first — you'll find yourself moving forward quite fast. Change up to second again) and this time keep the revs down to the 4000-5000 range — you're going sightseeing.

Take the car gently round the track, treating all corners with the greatest of respect, just to get used to the feel of the car and to learn the layout of the track. Once again, careful inspection of the documentation will pay dividends — especially the driving notes written by David Hunt. Admire the smooth scrolling and undulating contours of the track. You won't have a chance when you start driving fast!

Being a simulator, not just a game, Revs rewards practice and experience more than most — and talent. But at first you'll find yourself crashing and skidding all over the place. The first time I played Revs on the BBC B, it took me half an hour just to get round Woodcote! The watchword here is perseverence.

When you get your Silverstone time down to 1 minute 40 or so, perhaps it's time to try out a spot of racing — Novice class naturally — over five, ten or twenty laps. You will be asked to produce a qualifying time, in order to determine your grid placing. (If you choose Amateur or Professional Class, the qualifying times will be that much higher, and the opposition that much faster).

This is like practice, but watch out for the other cars trying to qualify at the same time... you are no longer alone. Once you've



qualified (or indeed if), you can start the race or enter another driver — this can be another 'you' or any number (up to 19) of friends. You won't be racing directly against then however. You take turns at the keyboard, replaying the same race over again, with the computer adjusting the performances of the opposition in line with the qualifying times. As Revs is played in 'real time', an average five lap race will take 7-8 minutes each, so patience is needed for large groups.

Novice

And so to the ultimate test — the race. If you're playing alone, be warned that the other 19 competitors all have names that are dreadful puns like — Hugh Jengine. Don't underestimate them because of this; they are hard and fast and mean...and although contact with other cars may not be fatal, it will certainly lose you time and so should be avoided at all costs. Racing tips: brake late, accelerate early and you won't go far wrong. Easier said than done.

To win the Novice races, you must be capable of consistantly lapping at around 1.28. This requires fearsome concentration, so it is nice to see a convenient pause button (Return). This makes sure that your best lap times aren't ruined by enforced pit stops — telephone calls, encyclopaedia salesmen, hunger pangs, etc.

The big question is, of course, how does it rate up against the original? The verdict is, very well indeed — even better than the Elite conversion in fact. Admittedly, BBC veterans will notice that the corners appear just that little more angular, and that the striped kerb along the side of the track flashes by that little bit slower — but CBM owners will never miss what they never had. On the plus side for the 64, the slightly better sound effects, a gamut of novel control options, a decent pause key and the whole new world of racing that an extra track brings. Brands has been lovingly recreated and take it from me, Paddock down to Graham Hill Bend is frighteningly close to reality. In short, Revs is still the nearest thing to driving a racing car without risking your neck — highly recommended for cowards and competitors everywhere. ■

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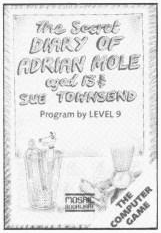
A holiday in the sun

*. . . **Ken Matthews** doesn't want one, if it's anything like the horrors of Terrormolinos. And he could do without the adolescent traumas of Adrian Mole, too . . .*

FIRST UP this month is the **Secret Diary of Adrian Mole** out of the Mosaic stable and sired by Level 9 around the book from Sue Townsend.

The pubescent problems of the game's hero have been on the box (no pun intended) for a while now so some of the situations will be familiar to most players, but just in case...

The book/film/game revolves around the private struggles of a spotty adolescent, desperate to be recognised as an intellectual and poet, with his family and friends. The game is rather a departure for Level 9 since it is not a true adventure game at all. There are no objects to collect of locations to visit, just a year's diary as written by the Mole. Every day or two, as the events of Adrian's life scroll before you, you will be offered a list of the actuions he can take to react to a given situation. You simply make a choice of our hero and read the reactions. Every now and again a score will appear to mark you progress towards urban fame.



The game fea tures graphics but this is merely a set of pictures that change every so often to give you something to look at.

The diary in the game is often very funny and for some quite unnerving as Ms. Townsend has a remarkable insight into the private world of a teenage boy. Because of the different responses possible the game contains over 200k of text and so loads from tape in four different parts, carrying your score over the next section. The game can be very long so a save routine is included.

So, though Adrian is thoughtfully laid out and programmed and great fun to play — adventure game it isn't — to my mind anyway. It doesn't seem to generate the compulsion to do well and complete the game that marks Level 9's regular adventure series.

Still I'm sure avid Mole fans will make the game do well if the name of Level 9 alone doesn't — they'll find it a lot less damaging than continually measuring their 'things'!?

Holidays

On now to a real treat, new from Melbourne House, **Terrormolinos.**

The idea of this one is simply to gather your family and holiday gear and suvive the perils of a typical package trip to the Home of the Bull-Pat.

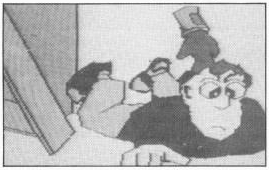
I've only found time to get about halfway through this one but loved every minute of this witty, stylish and original plot.

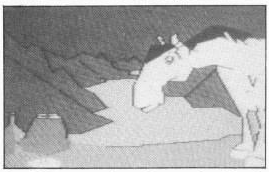
The game is clearly **Quill** plus **Illustrator** and shows just what can be achieved with Gilsoft's seemingly timeless utility. It is a fitting sequel to **Hampstead** — at least for those who have attained it!!!

The game starts with a race against time to gather suitcase, family and the seemingly endless buts and pieces you'd really be searching for as the taxi pulled up outside. .

The atmosphere is built cleverly with the minimum of time to get everything done and quite a few pitfalls that could end you holiday before it's really begun — wobbly steps and dark attics to mention but two.

On reaching the sun-baked Costa Bomb life becomes no easier as you simply MUST





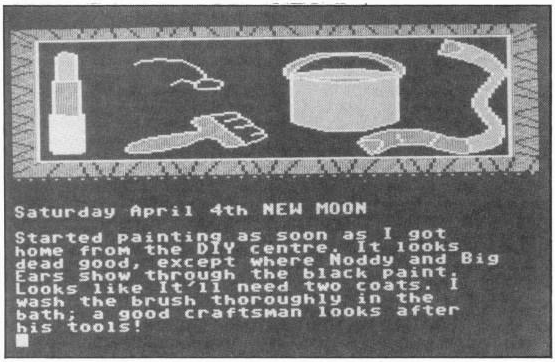
do all those touristy things and suffer the consequences — which are often more fatal than running to the loo only to discover the no-poo tablets are safe at home in the bathroom cabinet!

Still, throughout the game it can be fun to cock it up occasionally just to get a look at the excellent graphics that appear dotted round this page!

I won't spoil it by giving too much more away — part with some of your Christmas loot and play it for yourselves.

Next month I (definitely?) will be looking at **The Worm in Paradise** and Infocom's latest release **Wishbringer** — what else? Well, I've heard these rumours about a game called **Swords and Socery**!!!

Finally, any wargamer among you might get a treat to since over the last few weeks Gravesend's STEVE BISHOP and I have been looking at what's around and found two blockbusters about to appear from US Gold — more anon...■


Saturday April 4th NEW MOON
Started painting as soon as I got home from the DIY centre. It looks dead good, except where Noddy and Big Ears show through the black paint. Looks like It'll need two coats. I wash the brush thoroughly in the bath; a good craftsman looks after his tools!

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MINTER MANIA

***Jeff** goes 68000 crazy with the Amiga, delves into the 128 and freaks out to the music of the SID chip...*

WELL I GUESS it had to happen. I knew it eventually would, but it's the sort of thing you don't actually believe in until it finally occurs...but it's finally happened. Sitting down the end of my Llab, just around the corner from the ST, is a new Commodore system...and we're not talking 128's here, oh no. This little beastie's called AMIGA...

Testcard

At present I don't have that many demos for it (I should be picking up the classic demos, bouncing ball etc. tomorrow, when I visit a mate who's had his Amiga longer than I've had mine), but it still blows brains out with the few simple demos that come with it. Basically, there are 5: TestCard (shows all 4096 colours at once), Clock, Boxes, Lines and Dots. What I usually do to freak people out a bit is get up a LInes window, filling the whole screen. People look, and see Amiga drawing lines, pretty fast, and are impressed. Then I pop the Lines window to the back of the screen and show that the Amiga has, at the same time, been running 4 clocks of varying Dali-esque proportions, 3 windos of filled boxes, a couple of pixel plot windoes, and another smaller Lines one. All at the same time. Then I shut down all these other tasks, and as I doe so the original large Lines window gets revealed, and they get to see how fast the Amiga can really draw lines. At this point the observers just stand and swear quitly under their breath. (And remember, these are just the bog-standard, simple, boring demos that come with it. Wait'll I get some of the real mindblowers...)

I've also got the C language and an Assembler, but at present I've not been too deeply into either, apart from a few little C progs here and there. I daren't. I've got Atari 520ST Colourspace to finish first, then a C64 game to write. Then I can dive into the Amiga. I know that if I started now it'd be fatally addictive and I'd never get anything done at all...but I'm gonna enjoy Amiga. It could've been made for my Lightsynth project. The Atari version is already sufficiently far advanced to blow minds, and when the Amiga version gets underway..zowie!! They'll make it illegal, just wait and see...

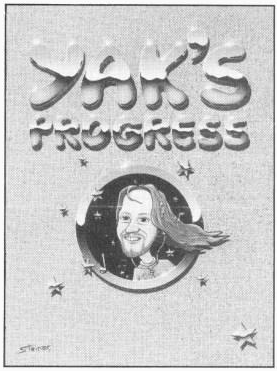
It's been quite surprising, too, to note the number of people who actually are going to get an Amiga when it's available here. They range from people who've started saving now and won't stop until the device is theirs, to groups of 3 or 4 C64 owners who intend to club together for a communal Amiga.

One or two interesting things about Amiga, too...apparently the chips were orignally designed for a $300 games machine which never materialised. Then it was going to be made into a machine called Amiga Lorraine, which was going to have 128k and a single standard-sized floppy, and possibly be compatible with the IBM PC Jr (hehehe). Then (apparently) Atari commissioned Amiga to develop the chips for use in the next Atari machine, but Amiga got into financial difficulties and Commodore stepped in and bought the company. The designer of the amazing Amiga custom chips is a guy called Jay Miner, who also designed the chips of the Atari 400/800 series computers, and the Atari VCS video game machine. Consequently the Amiga hardware is very, very game-oriented (which is great news for the likes of you and me). Lots of the examples in the Amiga hardware manual refer to game-type situations and explain stuff in terms of diagrams of tank games! Believe me, you are going to play the best games of you lives on this machine...OK, it can do business stuff, it's being pushed as a business computer, but remember this. Amiga's hardware was designed to play games. So there.

Anyway, away from the flashy 68000 world and back to reality. I've picked up a couple of other Commodore bits and pieces, namely a C128 and a little device called the Final Catridge. The 128 seems pretty good; there isn't one C64 game it won't run, and the keyboard is really top-notch. 128 mode is pretty good if you're into BASIC programming, with a load of graphix commands, sound commands, and sprite commands all available and easy to use. Disk commands are available too, and with the 1570 drive they're nice 'n' fast too. Provided I can get a decent Assembler to work in 128-mode, I'll probably use mine as a development system running alongside a standard C64 when I get my next game together.

Bankswitch

The Final Cartridge was given me at the Commodore Horizons show, and hasn't left the back of my '64 since. It gives lots of goodies like 5× disk turbo, 10× tape turbo, nifty ML monitor, Centronix printer dumps and the like all available from BASIC, and takes up no user RAM due to some nifty bankswitching. It agrees with most



commercial stuff, and if there's anything it doesn't get on with you can alway turn it off (there's a switch provided) so you don't even have to take it out of the cartridge slot...which brings me to my only complaint about it: due to some error of scale, it's damn near impossible to get it into your cartridge slot! It just doesn't seem to fit! Still, once in the slot you'll probably never want to shift it again anyway. Mine's staying put; it's just too useful, and I couldn't bear to go back to those old disk load speeds again!!

Puff-puff

I had my ears blown off recently, by listening to a disk of Rob Hubbard's music on the C64. That's the chap who did the music on **Monty on the Run** and **Crazy Comets**, and his demo disk was well impressive. Put it thru your stereo and it'll fry your synapses. Truly brilliant. There's this great train tune on one of the demos, and for a laugh I put the tune thru me stereo and then loaded Loco on another machine. The fantastic train music and the cutie puff-puff-train graphix together were just ace. I think I might just just hire this guy to do some stuff for my next game coz he's just awesome when it comes to music...

Anyway I better finish now...I shall keep you informed of progress on the **Amiga** front, and there are a few C64 titles I want a look at too. I've seen screen shots of Durell's **Critical Mass** and if the shots do the game any justice it looks like being my kind of shoot-'em-up. From what I've seen it looks a bit **Zaxx**-ish but scrolling in all directions, with a lot of bullets and a shadow under the ship. I do like a nice shadow under the ship. I'm off to logon to Compunet now...tata till nexxt time! ■

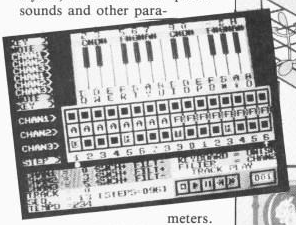
Electrodisco 64

Two of the latest music software packages examined by ***Mark Jenkins***
*— Orpheus' **Electrosound** synth and composer, and the best piece of 64 music software yet*
*— Firebird's **The Music System***

THE LENGTHS to which the C64's sound capabilities can be stretched are a source of constant amazement, and these two packages are amongst the most impressive yet released for the machine. While both have a compositional element, Firebird's **The Music System** (TMS) boasts a more complex, musically notated display and the **Advanced Music System** (AMS) has the ability to control professional synthesizers using a MIDI interface. Let's look at the simpler, tape or disk based **Electrosound 64** first.

Electrosound 64 is designed to work with the Commodore Music Maker, an essential purchase for music-oriented 64 owners which consist of a plastic music keyboard designed to clip over the top two rows of the computer's keys. While the Music Maker does come with its own software, Electrosound 64 is a distinct improvement on this.

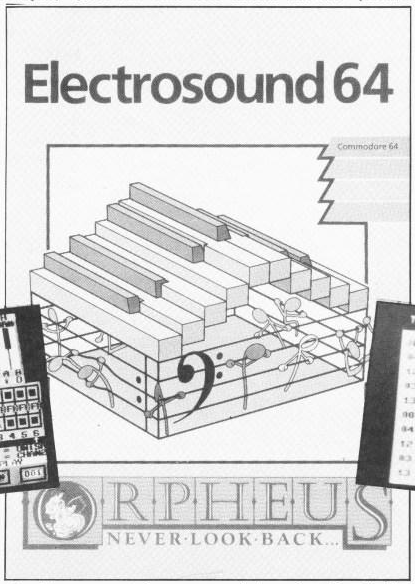
The packed and complex main screen display includes a diagram of the music keyboard, a grid-like music composition layout, and a list of preset sounds and other parameters.



You can begin by playing sounds manually, either polyphonically (up to three notes at a time) or monophonically for more powerful sounds, with all notes played showing as moving dots on the keyboard display. Through a hi-fi amplifier (Orpheus boosting sales of the Commodore Programmer's Reference Manual by failing to include a diagram of the output connections), the preset sounds are quite spectacular — by far the most synthesizer-like I've heard from a 64 package.

It's tempting to think that Orpheus have written additional modulation genrators and other facilities into the software — it's certainly powerful enough for them to have written the music for their own games such as "The Young Ones" using it — because some of the sounds give the distinct impression of more than three voices being available simultaneously! If you don't want to create you own sounds, there are five voice files each of ten sounds including Lead Synths, Harpsichord, Chimes, Pianos, Brass, Effects and Strings in the package.

To gain some idea of the package's compositional facilities, you can load an impressive demo which plays several classical pieces and some more modern bits. The ornamentation on some of these pieces is quite stunning, as are the changes of tempos and time signature which can be programmed as part of each sequence.



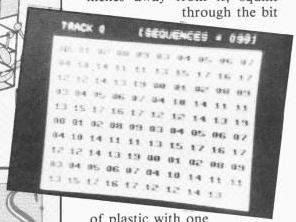
Editing pieces is simplicity itself — using the cursor keys you can step to any voice and column in the grid display and punch in new notes on the keyboard. The keyboard display also functions while sequences are playing back, which can be very educational in composition terms, and there are 24 preset percussion sounds which can be inserted between notes on any of the three channels to give the impression of three voices AND a drum kit playing.

A selection of keys not covered by the Music Maker keyboard switch in the filter, select new sounds, start and stop sequences and allow you to load new patterns from tape or disk. The Voice Grid in the centre of the screen allows you to change individual parameters of sounds using the Function keys; many parameters including Ring Modulation are accessible.

Electrosound 64 can record 20 sequences and 5 tracks for composition of very lengthy pieces, but you are limited to entering notes in step time and can't record notes "live". A little application is going to be needed before you can come up with pieces as impressive as the demos, not because the system is difficult to use but because it's inevitably time-consuming.

However, the manual is as helpful as anyone could desire, with complete tables of preset sounds, sound parameters, control functions and methods of modulation.

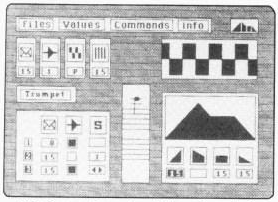
Now, stand in front of your television, hold a little bit of plastic in front of the screen, move your head exactly twelve inches away from it, squint through the bit of plastic with one eye and type whatever you see into the computer. After you've done this half-a-dozen times you may succeed in loading Firebird's **The Music System**, which is so well protected by an absurd security device called Lenslok that even hard-bitten reviewers have difficulty loading it.



It's worth the effort though. The Music System (TMS) was orignally designed for the BBC Micro by The System for Island Logic, and the C64 version has been delayed while a distribution deal with Firebird has been negotiated. In the meantime several new facilities have been added, notably the ability to interface to MIDI synths found on the Advanced version (AMS).

The basic operational method remains similar to the BBC version, however. A Macintosh-inspired main screen offers six

icons representing the Keyboard, Linker, Synthesizer, Editor, MIDI and Printer options, and the icon system is retained throughout the program, sometimes at the expense of its comprehensibility rather than to its advantage.



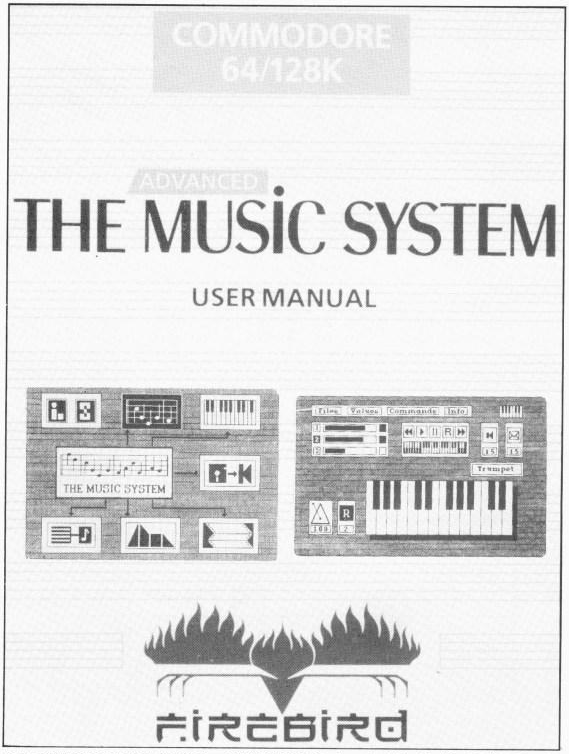
Music can be entered live in real time (from a Music Maker keyboard if you like) or edited in step time with full musical notation on a standard stave. Sounds can be created on the Synthesizer page with the help of an Envelope display, and saved to or loaded from disk into any song.

The Linker is simply a page which allows you to list files consecutively to create long patterns, and like the Electrosound 64 package, the AMS is capable of very lengthy compositions. The difference is that the AMS can print them out too, but how many three-part compositions are worth printing is open to question.

In compositional mode, the AMS works like a multitrack tape recorder, with Rewind, Fast Forward, Stop and Play controls and a three-bar display showing how much space is avalable on each to the three tracks. If you convert files to MIDI use you'll find another three tracks available, and there can be played by an external synth.

The AMS is obviously a very powerful package, but some of the demos included don't do it full justice. It's well suited to the advanced musician interested in music notation and printing facilities, but Electrosound 64 is cheaper and in some way more fun.

On the whole, though, these are two outstanding packages which only go to confirm the C64's position at the top of the league in micro music. ■



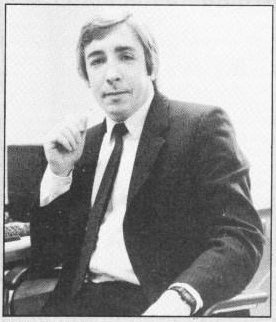
● **ELECTROSOUND 64:** £14.95 (tape) £18.95 (disk) Orpheus Ltd, The Smithy, Unit 1, Church Farm, Hatley St George, Nr. Sandy, Beds. Tel: 0767 51481/91.
● **THE MUSIC SYSTEM:** £14.95 (tape) £17.95 (disk) **THE ADVANCED MUSIC SYSTEM:** £39.95 (disk) Firebird Software, Wellington House, Upper St Martin's Lane, London WC2H 9DL. Tel: 01-379 6755/5626

RAINBIRD

THE MUSIC SYSTEM will be marketed by **Firebird** under the new **Rainbird** label. Headed by Tony Rainbird, the new section is part of Telecom's New Information Services division. Rainbird will specialise in state-of-the-art packages including strategy games, applications packages, arcade games and simulations.

Because of the complexity of Rainbird products, not all of them will be available on cassette. To exploit the potential of sophisticated disk-based products, Firebird Licensees Inc. will be marketing the products in the USA.

Forthcoming releases include a 64 version of **The Art Studio**, a sophisticated drawing program so far available only for the Sinclair Spectrum; and **Starglider**, a vector graphic combat simulator for the Atari 520 ST, and eventually the Commodore Amiga.



Tony Rainbird

The Music System, first previewed in Commodore Horizons almost six months ago, will be the first Rainbird product. The Music System can be obtained on cassette at £14.95, or disk at £17.95. Many users will want to upgrade later to the Advanced Music System, which includes the MIDI and Printer utilities. Rainbird will offer the upgrade for £25 plus the original cassette or disk.

Plans for promotion of the Advanced Music System include a tie-up with electro-pop funsters **Heaven 17**. The ex-**Human League** funkmasters will be converting some of their best-known hits, such as **"Crushed by the Wheels of Industry"** and making them available on disk in Advanced Music System format. More news as we have it.

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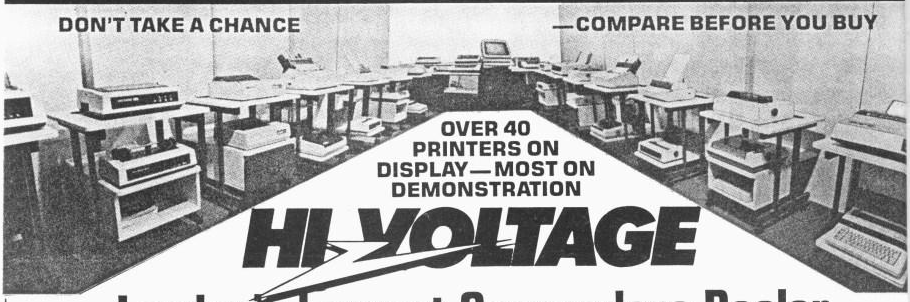

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The last and final?

*The Final Cartridge is the latest add-on operating system for the 64 — **Allan Hayesman** runs through its facilities, and asks whether it's the ultimate peripheral*

TWO months ago I purchased a 'Final Cartridge' from H & P Computers. To have to describe this product as a 'cartridge' is disconcerting. Although it is fitted easily into the computer just like a conventional cartridge, once plugged in what you are actualy getting is a new operating system that controls the computer from the outside. This exciting

achievement now opens up all sorts of new horizons, but for the moment I will concentrate on the immediate possibilities.

The built in tool kit gives most of the things expected from a first rate tool kit program, plus a bit extra.

AUTO: This gives automatic line numbering when writing a BASIC program by setting two parameters, i.e. Auto 100,10 will give you line numbers starting at 100 and continues increasing in multiples of 10 steps. By pressing carriage return after a BASIC line you will automatically receive your next line number.

DEL: Deletes as many lines from your program as necessary just by giving the line numbers, i.e. DEL 10-100 will delete all program lines from 10-100, a definite improvement from the time consuming one line at a time procedure.

OLD: Recovers a BASIC program after RESET or the NEW command. This is a boon for those of us with unhappay memories of spending countless hours typing in that long program, entering the word NEW and then forgetting to SAVE.

RENUM: Renumbers a BASIC program at an incredible speed by just entering two parameters. By entering RENUM 100,10 it will renumber a BASIC program starting at 100 increasing in steps of 10. All GOTOs and GOSUBs are taken care of. When used in conjunction with another facility explained later on this becomes a very useful command.

FIND: A avery useful utility for finding a string or variable in a long program. To find all the lines that contain A$ just type FIND A$ and the computer will list all program lines containing the variable A$ on the screen. Likewise to find a line with a string "Press any key to continue" just type FIND "Press any key to continue" and any line with that string in it will appear as if by magic.

HELP: This will find the incorrect lines in a BASIC program and list them ready for correction.

APPEND: Merges one BASIC program onto the end of another without disturbing the line numbers. This is where the RENUM now comes into play. All that is necessary is to APPEND your programs together and RENUM them.

The 'Final Cartridge' contains a very powerful and modified DOS that enables the 1541 disk drive to behave like a very satisfactory machine.

CATALOG: This lists the disk directory without disturbing the program in the memory. Pressing the CTLR key stops the listing; releasing the CTLR key allows the listing to continue. How this function will speed up loading will be explained later.

DAPPEND: the same as APPEND but this time from disk.

DISK: Reads the error-channel.

DLOAD: This will load programs from disk at SIX times the normal speed. It should load all programs without difficulty. As usual there is always the exception to the rule and those that will not load at fast speed will load at normal speed to disk. However, fortunately these are very few. For example the Superbase disk did cause some people problems with the loader not being the first program on the disk, but moving the cursor to the required program the complete disk will load.

DSAVE: This saves programs SIX times the normal speed to disk. This will also work with any program.

DVERIFY: This will verify a program on disk with a program currently in memory.

LIST: This will LIST a BASIC program and will remove any LIST protection that may have been inserted on the program.

The function keys also provide preprogrammed facilities: F1: LIST;F2: MONITOR; F3: RUN; F4: OFF; F5: DLOAD; F6: DSAVE; F7: CATALOG; F8: DISK COMMANDS — i.e. F8 plus return reads error channel. F8 plus N:name,id formats a disk.

I hope all you tape users have not given up hope. You have not been abandoned. The 'Final Cartridge' will program, record and files can be SAVEd and LOADed TEN times faster than usual by using the built in fast LOAD and SAVE routines.

For machine-code programmers there is a high quality machine-code monitor using most of the commands found in the standard Commodore monitors. As with the previous facilities this does not need to be LOADed and is summoned by pressing the F2 function key. Another convenience of this monitor is the ability to page out the BASIC and Kernal ROMs so that the whole memory of the program may be used.

The cartridge is also fitted with a reset switch. By pressing reset and the space bar, and the reset and 'Q' a 'non-resettable' can be reset. By pressing reset and RUN/STOP a program can be reset without disturbing it.

Finally, The Final Cartridge includes full Centronics printer interface software allowing you to use printers such as Epsons with a suitable connection cable. You can POKE the printer with various control codes to produce enhanced, inverse or condensed text, depending on its abilities, and produce listings using the full set of CBM graphic symbols.

It's also possible to produce high resolution

Epson FX-80 hi-res screen dump

screen dumps, by pressing the reset switch while holding down the CTRL key, selecting the screen display you wish to print out using the function keys, and pressing F5. Note that you cannot produce printouts of sprites, since these are not held in the hi-res screen memory.

I would say that the last two months using this cartridge has given my 64 a new lease of life. I consider it to be good value for money with well written documentation, something which is very rare for this type of product.

Hardware: The Final Cartridge
Micro: 64
Supplier: H&P Computers, 9 Hornbeam Walk, Witham, Essex
Price: £50.00
Centronics printer cable, £9.50.

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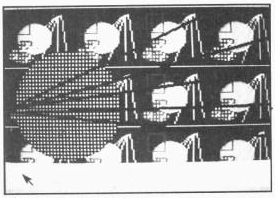
OF MICE &P

Some of the latest artistic add-ons for the 64 reviewed by hics



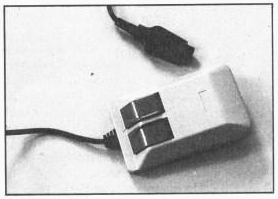
MS-2000 MOUSE

THE WIGMORE MS-2000 mouse is one of the best pieces of Commodore-compatible hardware to apear this year. Engineered to a high standard, and supplied with powerful software, it makes some previous attempts to design a Mouse for the 64 look sad.

The sleek, modern styling to the MS-2000 is complimented by its advanced internal design. Like other similar systems, it operates by translating the movements of a rolling ball housed in the base into digital form, and representing them on the 64's screen using a moving "icon". In this case, the moving ball is rubber coated, which makes it smooth in use and not prone to slippage. The two clicker buttons on the head of the mouse have a positive action, and the size of the mouse is such that it is very comfortable in the hand.

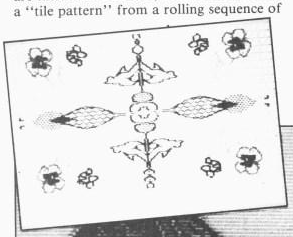
The software is supplied on cassette, and all storage of designs is made to tape too. Wigmore plan a ROM version of the software, and will probably offer an inexpensive disk update, and routines incorporating alternative text fonts on disk, at a later date.

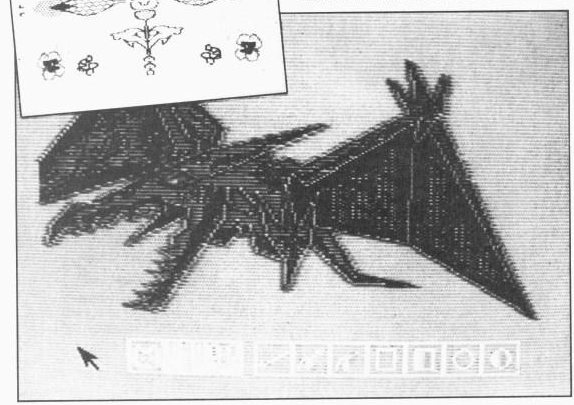
The command icons appear at the bottom of the screen. All the usual drawing features are included. You can, for instance, select a "tile pattern" from a rolling sequence of 32 different choices, and "paint" in this pattern. You can choose any of the 64's sixteen colours for the drawing colour, or for the cursor. Straight lines are drawn by selecting the Line icon; moving the cursor to the start point and depressing the mouse button; then moving to the end point of the line and releasing. All the drawing effects are remarkably fast and smooth; freehand lines, dotted lines, boxes and circles open or filled, and "spray" patterns are quickly and efficiently built up. Extra facilities include a "zoom", in which a box is defined and enlarged so that you can retouch you pictures to pixel accuracy; pencil thickness, to adjust the width of the drawing line; mirror image, to reflect part of the drawing along a user-defined line; fill, which is quick and efficient; background colour change; reverse left/right or up/down; scroll, in which the whole picture can be moved up or down, an amazing effect; a copy facility for any boxed area, useful for creating repeating patterns; and printout to MPS-801, MPS-803 or Vic 1525.

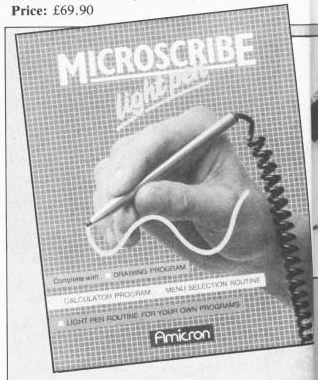


The resolution of the MS-2000 is 100 points to the inch, achieved by using an optical encoding system rather than the mechanical systems of other machines. Overall it is certainly the best mouse for the 64 so far, combining high standards of engineering with very clever, efficient and creative software. I would recommend it at the price, and hope to see more software which will make the most of this excellent device.

Hardware: MS-2000 Mouse
Micro: 64, 128 in 64 mode
Supplier: Wigmore House, 32 Savile Row, London W1X 1AG, 01-734 0171/2/3
Price: £69.90

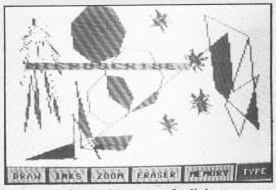






MICROSCRIBE LIGHTPEN

AMICON'S Microscribe light pen is a whole new development in the varied history of these under-rated peripherals. The Microscribe is the first 64 light pen to incorporate sophisticated technology, good construction and good hi-res design software.



The obvious advantage of a light-pen over a mouse it that it is cheaper to manufacture, and more straightforward to use (in theory). In practice, although lightpens for the Commodore computers have always been available, poor manufacture, ill-planned software and lack of support has made them impractacal. With the Microscribe, the days of wobbly cursors and user-unfriendly software have gone.

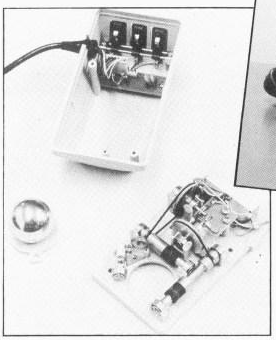
& PENS

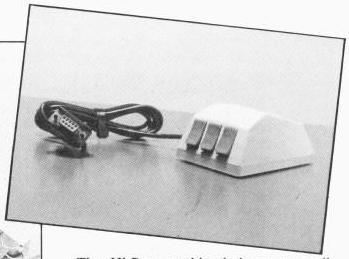
d by graphics wizard ***Derek Lawson***

MAGIC MOUSE

THE MAGIC MOUSE is being distributed by a number of dealers, the latest being Micro Media. It's a good basic concept, clearly designed to introduce computer users to the concept of Window/Icon/Mouse software at a reasonable price.

The Magic Mouse features three control buttons, in a case larger and less easy to handle that the MS-2000. The rolling ball mechanism is mechanical rather than electro-optical, but works acceptably.



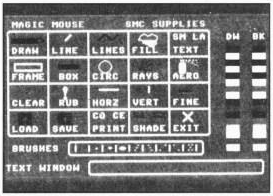


The Hi-Res graphic designer uses all sixteen colours on a bit-mapped scren, at a resolution of 160×200 pixels. A useful extra is that all the CBM graphic characters and letters can be incorporated into you designs.

The command function page is completely separate to the drawing page. This has advantages, in that the drawing area is larger, and disadvantages, in that all the options are not simultaneously visible.

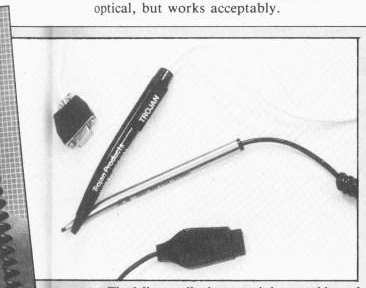
The right-hand button of the Magic Mouse is used to select options such as Draw, Line, Fill, Box, Circle, Ray, Spray, and so on. Two useful extra functions are Vertical, which enables vertical lines to be drawn easily by disabling horizontal mouse movement, and Horizontal, which disables vertical movement. All load and save functions default to disk, and printout is possible through the user port using Centronics printers.

The Sprite Design program enables you to design single — or multi-colour sprites on a design grid, of 24×21 characters. It's possible to use all the various 64 sprite options such as vertical or horizontal expansion, reversing pixel states, moving sprite pointers, and so on.



The Icon designer is a similar system which enables you to define UDG's which can be incorporated into you own Basic programs. The Mouse Control program allows you programs to be interfaced to the interrupt-driven control routines, and in combination with the Icon Designer this offers the possibility of writing your own Windows/Icons/Mouse programs. At less £50, the Magic Mouse hardware may not be as impressive as the MS-2000, but the selection of software offered may well convince some potential purchaser that it is an attractive option.

Hardware: Magic Mouse
Micro: 64, 128 in 64 mode
Supplier: Micro Media, Rydal Mount, Rydal Mount, Baker Street, Potter's Bar, Herts, EN6 2BP, 0707-52698
Price: £49.95



The Microscribe has a stainless steel barrel with a sensor switch on the nose which is pressed against the screen to register a command. Like a mouse, this enables the user to dispense with keyboard operation altogether.

The Microscribe software package come on cassette, but — and this reflects well on Amicron — there is an option to dump this software to disk. Once loaded, the first thing you will notice is that the software interacts so well with the hardware that the cursor reflects the movement of the pen accurately even when it is up to two inches away from the screen. This contrasts strongly with the performance of some lightpens, where the cursor flickers madly even when all the parameters have been adjusted to the optimum settings.

The **Graffiti** hi-res drawing software features six main icons, each of which when "hit" brings up another menu of options.

Options include freehand drawing, either continuously or only when the pen is pressed against the screen; solid of wire frame polygons of up to nine sides, or circles; brush painting, using user-definable shapes; lines, inks, borders, zoom, erase, storage to tape or disk, typing in characters, and so on.

Included on the Microscribe disk are Pencalc, an ingenious on-screen calculator display which allow you to do you sums without resorting to taking off your shoes and socks; and Pencode, which allows you to overcome some of the problems of using a lightpen in Basic, and design your own screen cursor.

Hardware: Microscribe lightpen
Micro: 64, 128 in 64 mode
Supplier: Amicron, 62-64 Queen's Road, Reading, Berks, RG1 4BP, 0734 500815
Price: £29.95

CADMASTER LIGHTPEN

THE TROJAN CadMaster lightpen is the latest in a series of developments from this company, and like the Microscribe uses sixteen colours and three "pens" to give designs of pixel accuracy.

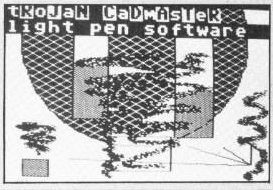
CadMaster is controlled using an option screen listing the various commands, a drawing screen, and various control keys.

The option screen shows the current command highlighted. The first row of options are concerned with line types, including Thin, Thick, Dotted, and various types of Quill, in which the line is thicker in the X direction than the Y direction, giving a copperplate effect.

Geometric options include Box, Ray, Line, Triangle, Circle, and so on; and other drawing options include Freehand, Fill, Text, Brush, Copy, and Border, Background and Cursor colours.

The Cadmaster software interacts well with the keyboard of the computer to adjust drawing to pixel accuracy. This is easier to achieve with a mouse, but if you have more patience the CadMaster can give equally good results. The software is available on disk for a small extra charge.

Hardware: Cad Master lightpen
Micro: 64, 128 in 64 mode
Supplier: Trojan Products, 166, Derlwyn, Dunvant, Swansea, SA2 7PF, 0792 205491
Price: £19.95



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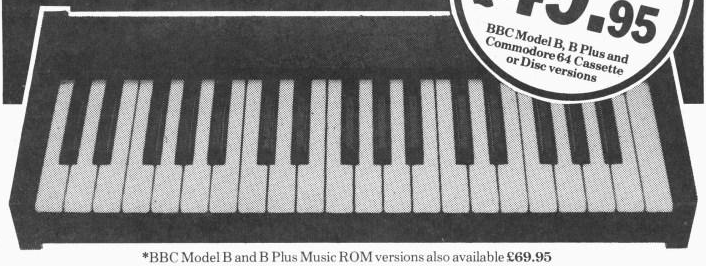

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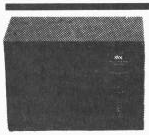

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Fifth-generation language

***John Cochrane** investigates LPA's 64 version of the impressive Micro-Prolog language*

DID YOU know that the command argument is what would be the single argument if the command name were used as a unary relation in a program? I didn't, at least not before I was asked to look into LPA micro-PROLOG by your kindly Horizons Editor. Come to think of it I'm still not at all sure if I know whatever it was that I started off by saying anyway. Confused? That's what comes from trying to learn micro-PROLOG too quickly.

Logic Programming Associates has actually done a pretty good job of encouraging you to spend a reasonable amount of time learning about their new software package, by taking the unusual step of not only providing a full 190-page reference manual but giving you a 180-page book as well, as a general introduction to PROLOG. There's just no way that you can rush straight into programming with that lot to read (unless you happen to be working for Commodore Horizons of course).

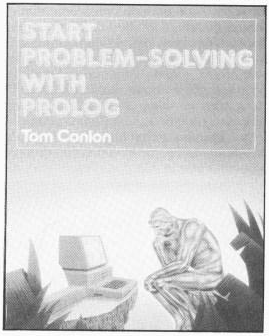
Both the book and the reference manual are, in the main, well written and add greatly to the value of the LPA micro-PROLOG package. One minor problem for first-time users is that the reference manual has been produced for use with C64, Acorn BBC, and Apple versions of the program. There are machine-specific appendices but some problems have crept into the main text. For example, the manual says "LOAD SIMPLE" when C64 users must "LOAD simple"; the load will fail if you get the case wrong.

PROLOG (PROgramming in LOGic) is receiving quite a bit of attention at the moment because it appears to offer the promise of allowing computer users access to the power and storage capacity of their machines without having the restrictions built into most traditional languages. In theory a PROLOG-based computer might be able to answer questions such as "how can I make the highest profit?", or "which computer offers the best value for money?". It is possible to use traditional languages to achieve a similar sort of thing (anyone who has played a good modern adventure game will know how well computers can, when properly programmed, understand sentences) but such a computer will fall over when you ask it something unexpected.

Research

In fact PROLOG looks so promising that it has been adopted as the basis for the much-publicised Japanese fifth-generation computer research project. One of the aims of this research is to produce computers which can converse in everyday language. The idea is that computers should be taught to understand humans, not the other way around. The problem is that there is a lot of work to be done before the fruits of this research will be available to the likes of you and me. In the meantime we can get on with micro-PROLOG, a version of PROLOG designed for use on microcomputers, and stick to the simple questions.

Micro-PROLOG, and indeed the full compiling versions of PROLOG, come in a number of forms. The pure form is powerful but somewhat rudimentary. To make it easier for beginners to use the language a number of extensions have been developed which make programming easier but which suffer some limitation either in terms of program size or performance. LPA micro-PROLOG comes as the base (or supervisor)



version plus a number of loadable utilities plus a total of three different educational extensions.

Equality

I do not have sufficient space here to go into details about what is unique about PROLOG, nor to give more than a very simple example of how it can be used. However what I can say is that where most other languages are based on the mathematical capabilities of the computer (in machine-code this boils down to adding and subtracting), PROLOG relies on the ability of computers to test the equality of two items of data (machine-code compare). The end result is a language which is much better suited to general problem-solving than langauges such as BASIC, FORTRAN, PASCAL, LOGO, and the rest, which are better suited to numerical analysis.

LPA micro-PROLOG is a comparatively costly but well-prepared packaged. I would certainly not recommend it to someone of an impatient nature! If you are a professional programmer though, or may one day become one, micro-PROLOG is well worth looking at. ■

In micro-PROLOG data is held in the form of Facts and programs are built up from Rules. A typical Fact might be entered as (using the SIMPLE language-extension);

straight-flush beats four-of-a-kind

A whole series of such Facts can be entered to show all the combinations of winning Póker hands.
A Rule might be;

I win if
I hold x and
You hold y and
x beats y

or;

You win if
You hold x and
I hold y and
x beats y

Variables appear in the rules starting with x, y, or z.
All the computer needs to know now are the two facts;

I hold full-house
You hold three-of-a-kind

and it will be able to answer the query;

which (x: x win)

with the response;

I
No (more) answers

Micro-PROLOG produces the statement **"No (more) answers"** *to indicate that it has found all the answers that fit the Facts and the Rules. The which command seeks out all possible options, in this case there is only one;* **I win.**

SOFTWARE: LPA micro-PROLOG
MICRO: C64
PRICE: £79.93 (inc. P&P) Disc version only.
SUPPLIER: Logic Programming Associates Ltd., Studio 4, The Royal Victoria Patriotic Building, London SW18 3SX

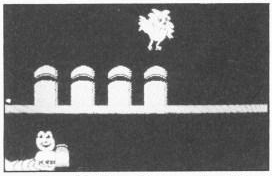
Lots for the tots!

Software for kids needn't consist of endless shoot-'em-ups —
***Mike Gerrard** looks at some educational programs featuring children's favourites*

Orm & Cheep

THESE TWO titles featuring TV's cartoon characters are both from the Widgit Software team, which is usually a good sign for software that's both fun and educational, through this time I felt the excellent sound and graphics have been let down by a rather poor and confusing content. A fast loader would have helped, too, as if anyone's going to be impatient on a Commodore load then it's going to be the young children that these are presumably aimed at.

The Birthday Party begins with a fairly straightforward game in which Cheep helps Orm to bake a cake, and you have to



remember which ingredients are in which of four jars as Orm calls for them in turn. From this simple beginning, though, things get very complicated, and to explain the next section I'll have to paraphrase Groucho Marx: "Why, a five-year-old child could understand this — go out and fetch me a five-year-old-child" You have to guide Cheep round the countryside and also round Mole's underground tunnels to collect various friends.

Moving round the countryside is tedious, especially once you've got a few friends in tow as each of them slides separately and slowly across the screen as you move from one place to the next, and even I got lost in the network of Mole's tunnels, trying to remember that I'd entered each picture as if from the bottom of the screen. A final game involves seating the friends in the right places round a table.

Narrow Squeaks was similar, with excellent graphics and sound but, I think, rather too complicated for the young children the characters will appeal to. I found it difficult getting to grips with the first mini-arcade style game, where Cheep moves round the screen and you have to manoeuvre him over various kitchen objects in turn, and then you move these into a stack at the side of the screen. The difficulty is that he is moving contantly and will only make a quarter turn clockwise when you press a key. Moving to the right and down is very easy, but to the left and up is extremely frustrating, and in an annoying rather than an amusing way.

This is followed by a variation on the *Simon Says* memory game, and another couple of small but amusing games. I suppose it is difficult to design games that youngsters can cope with, without making them too simple, but I've a feeling anyone who likes watching *Orm* and *Cheep* will prefer the TV versions.

◆

Software: Orm and Cheep: The Birthday Party/Narrow Squeaks
Price: £8.95
Supplier: Macmillan Ltd
Machine: Commodore 64

Winnie the Pooh

THIS IS for anyone from the age of seven upwards, apparently, though I've always found Pooh to be a bear of very little appeal, too cutesy-wutesy altogether. I mean anyone who hangs around with a wet like Christopher Robin has a great deal to answer for. So completely unbiased, I shall venture into the **Hundred Acre Wood** adventure, where the story is that a blustery wind has scattered the belongings of

Pooh and his friends, and it's the job of the luckless bear to find these and return them to the right people, a job made more difficult because he can only carry one object at a time and also cannot drop an object in a place where one is already present.

Each location is accessed from disk and consists of a colourful and reasonably quickly done drawing occupying most of the screen, with room for a few lines of text beneath. Much of the text is amusing, and probably familiar to devotees, and the adventure itself is mainly menu-driven. In other words you're given a list of options and have to choose one. The space bar moves your cursor through the options, and RETURN selects one, these being the only two keys needed in the game.

Despite the inclusion of some very nice touches, such as a location where you can listen to Tigger's song, and a SAVE option that even the youngest child could cope with, I found the game to be rather uninteresting. You have ten objects to find and return, these being placed randomly for each new game, but as you return each object you're merely thanked and told to go on to the next. And that's it. If you take too long about it then the wind will return and redistribute anything still lying around, but despite my belief in the educational value of almost any adventure I found it hard to understand the value of this one. Very jolly for a while, and young children will probably like the repetitive familiarity, but I can't see anyone older than seven or eight playing if for very long. Unless you're as wet as Christopher Robin, of course.

◆

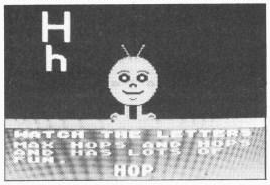
Software: Winnie the Pooh in the Hundred Acre Wood
Price: £12.95, disk only
Supplier: Walt Disney Personal Computer Software/U.S. Gold
Computer: Commodore 64

Max

AT LAST a piece of educational software that actually states the age range it's aimed at, and also what it hopes to teach. As on top of that it's delightfully programmed, Beyond show they can be just as selective in this area as in their games software.

There are four levels, tailored for different ages and abilities, and the programs can either be done by the child alone or under supervision. They all take place on a small stage on the screen, and the jolly opening music is just like settling a child down to its favourite TV programme. All features a character called Max, a round orange creature resembling the Space Hoppers that were popular several years ago. The easiest option is simply watching the letters, as Max goes though the alphabet and produces an action to illustrate each letter. These are beautifully animated, and had me laughing as he D for Danced and H for Hopped around. As well as upper and lower case being shown on the stage, each letter is sensibly matched to its place on the keyboard beneath.

Next option is to ask the child to press a letter to make Max perform one of his little routines, and these are so attractive that it's



an incentive to a child to learn which letters go with the words for which actions. The response is also instantaneous, the selected letter seeming to slide on screen before you've even touched the key!

Then you're given a letter on the screen and must find it on the keyboard, the reward being another little performance from Max, and all these programs show a great deal of amusement and matience, which is important to the child that finds it hard to do. Finally Max comes on and does one of his actions, such as K for kicking or P for Peeking (which I suppose is better than P for Poking) and the child must find the letter on the keyboard. Lovely stuff, not too ambitious in its intentions, but well through out and definitely one for the Christmas stockings.

◆

Software: Romper Room
Price: £9.95
Supplier: Beyond
Computer: Commodore 64

The Mr Men

THE GENERAL standard of Mirrorsoft's educational titles has been very high, and this new one featuring the well-loved Mr Men is no exception. Aimed at children from five to eight years old, it includes two sections: **Mr Noisy's Word Game** and **Read With Mr Bounce.**

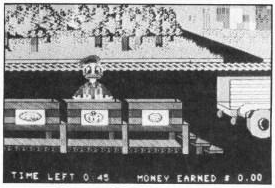
The first is intended to give a greater understanding to the concepts of Opposites, Comparatives and Superlatives, with a choice of nine 'games' of increasing difficulty. The first simply introduces words by showing how, for instance, Mr Silly could be tall or short, wide or thin, and later games introduce the idea of taller and tallest, shorter and shortest, and so on. The child might be asked to type in the word to describe the Mr Man, eventually being asked for opposite words and finally typing in full sentences such as "Mr Silly is Fat," whereupon a Mr Silly puts in an appearance.

Read with Mr Bounce deals with the prepositions, showing the bouncy fellow on things, in things, outside, under and beside things, and is generally useful although using simple cartoons to try to illustrate the difference between in and inside, for example, doesn't always work properly. There are three main scenes, with five different games to play, and again they gradually increase in difficulty once the child is ready to move on.

Lively graphics and sound on both of these, and the popularity of the Mr Men should assure that children will want to play the games, increasing their vocabulary and their general reading skills.

◆

Software: Word Games with the Mr Men
Price: £9.95
Suplier: Mirrorsoft
Computer: Commodore 64



Donald Duck

THIS IS one of several titles being put out by U.S Gold on the specially created **Kids!** label, and a wonderful piece of software it is, too. I had as much fun with this as with many a mega-game, and it certainly has a healthy teaching content too.

You'll need a joystick to move Donald around the screen, the game beginning with him on a main street, down one side of which are stores, down the other side chores. I wandered into one of the stores, where other Disney characters offer you some tempting playthings. Unfortunately, I discovered, Donald had no money, but across the street I found several places where I could put him to work for a set number of minutes in order to earn a few precious cents. Lesson one is the realities of life, I think.

One job was loading cargo at the airport, with parcels coming along a conveyor belt each with three letters stamped on the side to indicate the destination airport. You have to pick up a parcel and put it in the right container from four behind you, and you're only paid for correct ones. This puzzled look in Donald's eyes as he wanders along with a parcel in his hands is a treat, as is the way he leaps up and down and squawks at you if you make a mistake in the fruit farm. Here you have to catch a piece of fruit and put it into the correct container, this time matching up pictures rather than letters.

Next task is in the toyshop, running up and down a ladder with toys in your hand, and finally there's a railroad game where you have to continually switch six points on a track in order to get a train to deliver goods to the right station.

When you've earned your cents (and you can wander in and out of whichever doorways you choose) you then get to spend them, but it's up to you to place the right coins and notes in the shop tills to pay for the goods, taking the correct change as well. Very trusting of the local shopkeepers, though I wouldn't try cheating if I were you.

You then stack you hard-earned gains across the railway tracks at the top of the screen, with Donald naturally looking both ways before he crosses the tracks, and here you can make him play with the various things he's bought. Great fun, well though out, and genuinely educational in a way that will make children want to play.

◆

Software: Donald Duck's Playground
Price: £12.95 on disk
Supplier: Walt Disney Personal Computer Software/U.S. Gold
Machine: Commodore 64

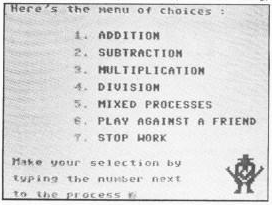
Henry Hilo

THESE ARE just two of a whole host of titles released for the 64 by publishers McGraw-Hill in a series called **Ladders to Learning.** If these are in any way typical, it seems to be a case of quantity rather than quality.

Hangman III is described as "an exciting spelling game with a difference, accompanied by superb graphics and sound." Well, I would hardly call a game based on Hangman different, as there are about 27 versions of it for every computer under the sun, while the superb graphics consists of a drawing of a Hangman scarcely better than you can do with pencil and paper, and I must have missed the superb sound while I was busy admiring the superb graphics. It is said to be for children from 8-10, but the different difficulty levels are given according to the American school grade system — it wouldn't have taken much effort to change this for a British market.

If the game is a duff choice, the implementation is even duffer, with messages being slowly printed on the screen a letter at a time, and when you begin a game you must sit and watch while the computer 'reads' the words in its volcabulary, i.e. prints each one briefly on the screen. As there are approximately 200 words in each skill level, you can imagine how long this takes. In the game itself you only have seven incorrect guesses allowed, rather than the 11 you'd get with the way most people would draw a hangman, and the program isn't even protected, which all educational software should be in case the wrong keys get hit. But at least if you can break into the program you might be able to improve it.

Balloon Game is for ten-year-olds and over, and is a race game for 1-4 players. At the start you're given several pages of information about winds, air, climate and the atmosphere (purely text, so a waste of the 64's graphics potential for making such subjects interesting)

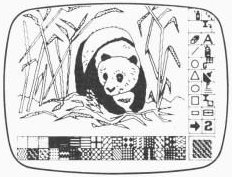


before moving on to the game itself. You press a key to spin an arrow, which may come to rest on a number or a '?'. If the former your balloon makes the appropriate number of moves across the screen, or if the latter then you have to answer a question to earn a random number of moves. First of the four baloons to the other side wins. To quote the cassette cover again, "Enjoy the excitement and danger of hot air ballooning." So much hot air, I'm afraid.

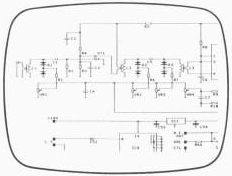
◆

Software: Balloon Game and Hangman III
Price: £7.95
Supplier: McGraw-Hill
Machine: Commodore 64

HIGH-RES GRAPHICS AT LOW-RES PRICE

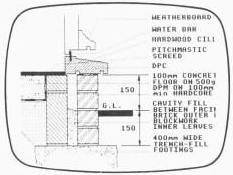


FREE-HAND DRAWING ICON SOFTWARE



ELECTRONIC CIRCUIT DESIGN WITH CIRKWIK

USING GRAFPAD FOR TRACING



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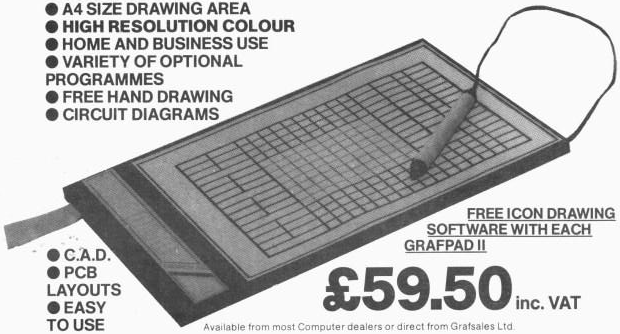

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CH1

Casting the 'Net wider

*Douglas and **Richard Hare** — otherwise known as **MACH '81** — discuss the joys of using Compunet*

Each month, in this feature, we shall be highlighting what's New and exciting in networking, although regular 'net users will know how difficult it is to remain unbiased!

Speaking of us, most Compunetters will know us as 'MACH 81'. If you reckon that's a pretty weird name, here's a short list of some other users' aliases. The Mighty Bogg (or 'Bogg' to his close friends); Yeti; Goggus; Antelope — see what I mean? Anyway, before we digress any further, here is a rundown of what's happening on Compunet.

Party Line

Those who were fortunate enough to see the **I.C.C.** stand at the **Commodore Horizons Show** would probably have been shown a pre-release version of **Party Line**. This allows users to chat to each other in a scrolling, real time, C.B. format. Being two of the privileged few who were offered to use if for the show, we found it to be much faster than the old Chat Line, making it less frustrating and more enjoyable.

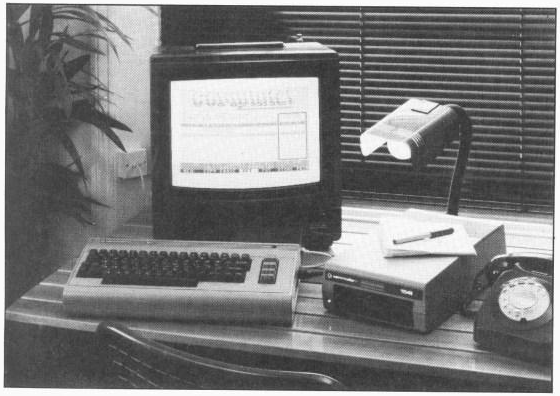
Apart from its speed, it is possible to find out who's present with the 'WHO' command (very like M.U.D.). This is an improvement, as it prevents you from speaking to yourself for half an hour before logging off in a fit of rage. Another new command, 'ALIAS' is available. This turned out to be one of the most popular features. It allows you to use a more personal name along with you I.D. This may seem innocent enough, but most the Party Liners did abuse their aliases, with often amusing results. How? Well, when you create a new alias it is printed up on the P.L. in this format; 'MACH 81 is now RICHARD' for example. Still seems pretty innocent, doesn't it? In fact it is until yuou start doing things like this: 'MACH 81 is now DEAD' or 'CLIVE S. is now BANKRU PT'! Get the idea? Endless hours of fun we assure you.

Although there was a limit of eight users at a time when we used it, there have been plans for of a 'room' version being introduced later, in which the Party Line would be split into different 'rooms' each capable of holding 8 users and you would be able to speak to the people that were in one 'room' only. So when someone enters the P.L. they would choose which 'room' they wished to enter. A group of people who want to chat privately may be able to reserve a 'room' for themselves.

When the finished version of P.L. is released later in November, it will be very busy since it has long been awaited by many C'netters. We certainly recommend it to anyone and if you aren't a subscriber yet then here's a thought for you: Talking to someone who lives a long distance away from you on Party Line will probably be cheaper than phoning him or her directly. Spooky huh?

There has been no sight of M.U.D. II yet but there still seems to be a lot of action happening on M.U.D. recently. It appears that certain nasty wizards and witches have been zapping other Mudders for no reason. To combat these rather underhand actions, JG82 has set up a Multi-User Gang. If you have been killed by the powers of a corrupt wizard or witch, then you can contact M.U.G and put a contract on the offender. The Muggers will then carry out the sanction and with any luck punch his lights out, in the nicest possible way!

The company **Reactive** has set up a section called **Bargain Basement**. On sale are both software and hardware products at discount prices. To purchase the goods you want is simple; you just busy the order form! The order form is a page which has the appropriate price put on it. Once you h ave bought the desired form you mail (Compunet mail that is) it to Reactive along with your personal details.



DON'T FORGET the Commodore Horizons/Compunet Graphics contest! Check out the What's New section of Compunet for details — you can win one of six Wigmore House MS-2000 Mouse packages, with hi-res graphics software, if you computer art measures up!

Nearly two months ago Compunet set a competition for writing a slogan to describe the 'net. The prize for the winner was a colour monitor, but we decided not to enter as the only idea we had was "Discover the secret of the black, magic box". However, C'net has announced the winner and it's James Taylor (JRT3) with his slogan "Log on to the Live One". So look out for it in C'net's adverts from now on.

Well that about wraps it up for this month. Remember our I.D. is 'MACH 81' if you want a chat (hopefully on Party Line soon!), so until then, it's goodbye from him and it's goodbye from him. ■

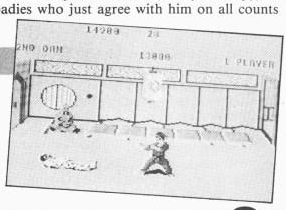
THAT WAS '85

Your chance to vote for the best and worst of the year, and win top software prizes

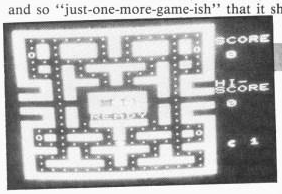
YOU'VE SPENT a year reading what our reviewers think are the best Commodore products; now it's your turn to have a say. Vote for the best (and worst) of 1985 and you can get your list published in Horizons, and win the latest games titles from TEN top software houses.

Just fill in the form — leave blank any categories in which you don't have a nomination — and post the form (or a photocopy) to the competition address. Remember that the Editor's suggestions are just for fun; any toadies who just agree with him on all counts will be eliminated.

1 BEST ARCADE GAME



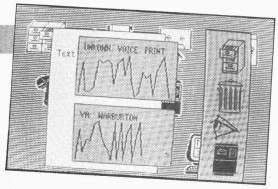
What should you look for in an arcade game? The best combination would include skilled programming; exciting sound and graphics; and challenging gameplay. IJK's **Rocket Ball,** the high-speed futuristic contact sport simulation, gets very high marks from me, as doe **ACE,** Cascade's combat flight simulator. But the best of the year has to be Melbourne House's **Way of the Exploding Fist;** brilliant in design and execution, and so "just-one-more-game-ish" that it should be rationed.



ARCADE TURKEY 2

Worst arcade game; well, what a lot to choose from. Although it would be easy to pick some dire budget title, distinguished only by chunky graphics and derivative design, let's use a little imagination, too. Let's consider those titles backed up by massive advertising campaigns and sold at inflated prices, which still manage to be crap. I'm sure you all have your favourites.

3 BEST ADVENTURE GAME

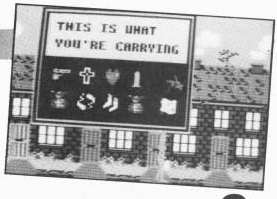


Adventure games come and go, and although the text-only types seem to be waning as compared to graphics-based programs, there's still a lot of mileage in them. Programs like Beyond's **Shadowfire** have set new standards for programming; although some would argue as to whether it's an adventure I'd nominate **The Fourth Protocol** in this category, but I would expect many to nominate more conventional adventures like the disk version of Mebourne House's The Hobbit.

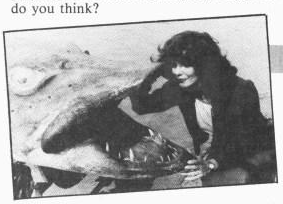
ADVENTURE TURKEY 4

There are lots of rotten adventure games on the market, many of them drawing very heavily on the influence of **The Hobbit,** (not, I hasten to add, a rotten game itself). However, it isn't just the warlocks-and-wallies genre which gives rise to duff stuff; so there's plenty of choice for adventure turkey of the year.

5 BEST ARCADE-ADVENTURE



Arcade adventures are easy to spot though hard to define; the obvious points are a combination of animated graphics and an element of quest. Ultimate's **Staff of Karnath, Entombed** and ***Blackwych*** are among the best-known examples, The Edge's **Wizardry** an excellent contender, but for the best of the year, a combination of sophisticated graphics and complex gameplay, I'd go for Ocean's **Frankie goes to Hollywood.** What do you think?

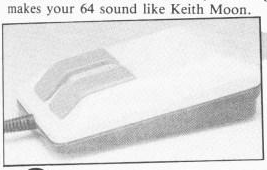


ARCADE-ADVENTURE TURKEY 6

There are lots of over-hyped arcade adventures, so you should be spoiled for choice here. **Ultimate** rip-offs abound, and many budget titles consist of little more than making your way through the magic lands of Tharg collecting the sacred gemstones of Splodge. Go for the throat on this one.

7 BEST CREATIVE PACKAGE

Blessed with the best graphics and sound facilities of any popular home computer, the 64 has many excellent creative hardware and software packages. Anirog's **Voice Master** speech sampler, Supersoft's **Microvox Digital Sound Editor**, the Island Logic-Firebird **Advanced Music system**, and Commodore's **Music Maker** packages are all contenders; but my favourite would be the **Syntron Digidrum**, the digital percussion add-on which makes your 64 sound like Keith Moon.

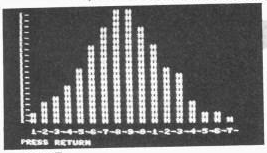


BEST HARDWARE PRODUCT 8

There's lots of lovely hardware for the 64; joysticks, speech synths, samplers, disk drives, and so on. And let's not forget Commodore's 128, new disk drive and so forth. But, the bit of hardware which has given me the most pleasure is the small but perfectly formed **Wigmore House MS-2000 Mouse**, with its hi-res graphics software. No doubt you have your favourites too.

9 BEST PROGRAMMING UTILITY

Plenty of programming utilities to choose from too, on cassette, disk and ROM. Anything which makes it easier to use the micro; Basic extensions, machine code utilities, language packages such as Forth, Cobol, and Pascal; what's your favourite? Personally I'd choose the package which offers a Basic toolkit, fast DOS and tape operations, printer utilities and lots more, the **Robcom Turbo 50** cartridge.



BEST "BUSINESS" PROGRAM 10

Business utilities such as word processors, databases and spreadsheets aren't everyone's cup of tea, but they certainly aren't all alike. Audiogenic's **MicroSwift**, **MicroMagpie** and **MicroWordcraft** have had an enormous impact, as has the budget **Mini Office** cassette from database. Established companies such as Viza and Precision have also come up with new versions of old favourites.

11 PROGRAMMER(S) OF THE YEAR

Programmer(s) of the year; what a hard one. Would I be accused of bias if I nominated Jeff Minter? Before you all howl "FIX!" just because Jeff wrote the fabulous **Syncro** and **Syncro II** and his monthly column for us, let me remind you of **Ancipital**, **Mama Llama**, **Psychedelia**, **Sheep in Space**, **Batalyk** . . . however, feel free to nominate whatever individual, team or title you wish for the Programmer of the Year award.

YOUR OWN CATEGORY 12

Lastly, the do-it-yourself section. Invent your own category and winner. Anything you like, not even necessarily to do with computers. Suggestions; **Psychedelia**, for the year's greatest contribution to peace, love and harmony, **New Order**, for **The Perfect Kiss**, the year's best 12" single; **Clive Sinclair**, for the best contribution to sales of Commodore computers . . . etc, etc, etc. Use your imagination.

Name _____

Address: _____

COMMODORE
HORIZONS
1·9·8·5
AWARDS

These are my nominations for the Commodore Horizons '85 awards:

(1) BEST ARCADE GAME _____
(2) ARCADE TURKEY _____
(3) BEST ADVENTURE GAME _____
(4) ADVENTURE TURKEY _____
(5) BEST ARCADE-ADVENTURE GAME _____
(6) ARCADE-ADVENTURE TURKEY _____
(7) BEST CREATIVE PACKAGE _____
(8) BEST HARDWARE PRODUCT _____
(9) BEST PROGRAMMING UTILITY _____
(10) BEST "BUSINESS" PROGRAM _____
(11) BEST PROGRAMMER _____
(12) YOUR OWN CATEGORY _____ WINNER: _____

Send your completed form, or photocopy, to The Best of '85, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP, to arrive by the last day of January.

Evesham Micros

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DISC TO TAPE: ANY memory resident disc program can be backed up onto tape. (Choice of normal or turbo save speed.)

DISC TO DISC: It is possible to make a self-contained back up of disc based programs that will **load at high speed** and **allow the rest of the disc to be used as normal**

TAPE TO TAPE: Tape back ups can be made at turbo speed with just one tape deck.

In fact **"Freeze Frame" will FREEZE any program** that is memory resident, and allow you to make a back up of that program onto tape or disc. The beauty being that the speed versions can be a fast booking simple file. The process is **completely automatic**, no knowledge of BASIC or machine language is required, just follow the prompts and the simple instructions for **100% success**.

"Freeze Frame" is a hardware "device" that plugs into the cartridge port of the 64. It does **NOT** during the entire contents of memory, just the **working program**. Programs converted run **independently** of the hardware.

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WARNING! Don't be mislead by other adverts. If you want to transfer turbo load programs to disc, software only utilities are **inadequate**. They suffer from a variety of drawbacks including poor success rate, awkward to use, greedy on disc space and overpriced.

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DISC DISECTOR V3.0

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The Evesham Nibbler

This is the best copier of its kind to appear on the U.K. market. This is the first copier to be supplied with a manual that will copy **ALL DOS errors automatically**. This includes 20-25 sec. plus non standard sync, non standard gaps, extra tracks, non standard sectors. No knowledge is required. At a 5 job as normal sync. No knowledge is required. At a 5 job. As normal sync. No knowledge is required. At a 5 job. **"nibbles away"** and produces a perfect copy. Yet it **only takes eight minutes**. Has copied all those that USADs and even has a **class above** anything else available.

Fast File Copier

An **incredibly handy** selective file copier that LOADs and SAVEs at **five times** normal speed. Supports commands. Ideal for beginners. Now multi drive users can enjoy the following: **Fast Format**. Selective Menu Driver. Incorporates a whole host of useful utilities including **Fast Backup**. **Fast Format**. **Selective Menu Driver**

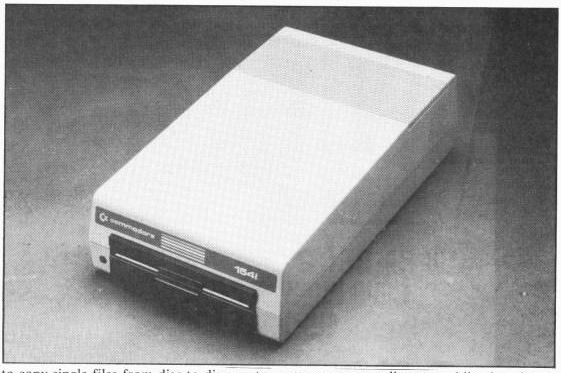
Disk washing

If your disk files are in a mess, ***John Cochrane's*** *routines will allow you to examine, copy and rearrange all your programs slowly but surely*

THE 1541 disc drive may be slow and oversized by today's standards, but it does the job intended for it of storing programs and data relatively easily and relatively quickly. If you are like me, however, this leads to problems, a pretty soon you have a whole load of discs filled with all sorts of rubbish, half finished programs, forgotten data files, and so on. Now I know that the answer to this is to keep a better filing system in the first place, I preach this philosophy myself, but somehow things never quite work out that way.

Recently I got to the stage where all of my discs were in use for one project or another but I wasn't quite sure what for. I would load in a directory to try and find out what I had been up to a month or so earlier and be faced with a list of half-meaningless file names. I couldn't even be sure that those called "TEMP" could safely be deleted. This problem, which can worry even the most fastidious file-keeper at times, is made worse by the lack of a command to enable the backing up of files from one disc to another. Thus in a desperate attempt to rescue myself from my confused disc filing I wrote the following program.

DCOPY is slow and will not work on copy-protected commercial discs. What it does do is give you the ability to display directories of all your discs a page at a time, to copy single files from disc to disc, or to go through a single disc copying all the files to another one. This last is very useful for making regular backups of working discs.



The program is menu-driven; a menu is displayed at the top of the screen giving the options available. Options are selected by pressing a single key. If an error occurs whilst accessing the disc drive, for instance if you attempt to get a directory whilst there is not disc in the drive, the program will stop with a suitable error message and you will have to re-start to try again. Files are read from disc a byte at a time and stored in memory in a string array. When the full file has been stored in this way you are prompted to change discs and the file is copied to the new disk. ■

```
10 REM********** DCOPY ****************
20 REM THIS PROGRAM COPIES DISC FILES
30 REM TO MEMORY AND THEN BACK TO DISC
40 REM**************************************
50 GOSUB 6000
60 GET I$:IF I$="" THEN GOTO 60
70 IF I$="D" THEN GOSUB 3000
80 IF I$="C" THEN GOSUB 1000:DP=1:GOSUB 2000
90 IF I$="P" THEN GOSUB 2000
100 IF I$="M" THEN GOSUB 4000
110 IF I$="Q" THEN GOTO 130
120 GOTO 60
130 CLOSE 15
140 STOP
1000 REM*********** COPY *****************
1010 REM COPY FILE F$ OF TYPE T$ FROM
1020 REM SOUCE TO DESTINATION DISK
1030 REM**********************************
1040 INPUT "[CLEAR]INPUT THE FILE NAME";F$
1050 PRINT "[CLEAR]INPUT A SINGLE CHARACTER
FOR FILE TYPE"
1060 PRINT "[DOWN][DOWN]E.G. P (PROGRAM)"
1070 PRINT "      S (SEQUENTIAL)"
1080 INPUT T$
1090 REM 2ND ENTRY POINT
1100 PRINT "[CLEAR]INSERT SOURCE DISK"
1110 INPUT "RETURN WHEN READY";T1$
1120 PRINT "[CLEAR]COPYING ";F$;" TO MEMORY"
1130 OPEN 8,8,8,F$+","+T$+",R":GOSUB 5000
1140 M=1:N=0:M$(0)=""
1150 GET#8,T1$:T1=ST
1160 M$(N)=M$(N)+LEFT$(T1$+CHR$(0),1)
1170 IF T1=64 THEN GOTO 1210
1180 M=M+1
1190 IF M=256 THEN M=1:N=N+1:M$(N)=""
1200 GOTO 1150
1210 CLOSE 8:GOSUB 5000
```

```
1220 PRINT "{CLEAR}INSERT DESTINATION DISK"
1230 INPUT "RETURN WHEN READY";T1$
1240 PRINT "{CLEAR}COPYING ";F$;" TO DISK"
1250 OPEN 8,8,8,F$+","+T$+",W":GOSUB 5000
1260 FOR M=0 TO N
1270 PRINT#8,M$(M);
1280 NEXT M
1290 CLOSE 8:GOSUB 5000
1300 RETURN
2000 REM******** LIST ******************
2010 REM LIST THE DISC DIRECTORY
2020 REM********************************
2030 PRINT "{CLEAR}(D)IR (C)OPY (P)AGE
(M)ULTI (Q)UIT"
2040 PRINT:PRINT "TYPE NAME BLOCKS"
2050 IF E<1 THEN PRINT "NO FILES":RETURN
2060 M=(DP-1)*20+1
2070 T1=M+19:IF T1>E THEN T1=E
2080 FOR N=M TO T1
2090 PRINT N$(N)
2100 NEXT N
2110 DP=DP+1
2120 IF T1=E THEN DP=1
2130 RETURN
3000 REM******** DIRECTORY *************
3010 REM GET DIRECTORY FROM DISC
3020 REM********************************
3030 OPEN 8,8,8,"#":GOSUB 5000
3040 E=1:I$="P":DP=1:S=0
3050 T2=0
3060 PRINT#15,"U1:" 8;0;18;S
3070 PRINT#15,"B-P:" 8;0
3080 GET#8,T1$:TN=ASC(T1$+CHR$(0))
3090 GET#8,T1$:S=ASC(T1$+CHR$(0))
3100 IF T2=0 THEN T2=1:GOTO 3060
3110 FOR F=1 TO 8
3120 GET#8,T1$:T1=ASC(T1$+CHR$(0))
3130 IF T1=0 OR T1=128 THEN GOTO 3310
3140 IF T1>4 THEN T1=T1-124
3150 N$(E)=TP$(T1)
3160 GET#8,T1$:GET#8,T1$
3170 FOR N=1 TO 16
3180 GET#8,T1$
3190 IF T1$=CHR$(160) THEN T1$=CHR$(32)
3200 N$(E)=N$(E)+LEFT$(T1$+CHR$(32),1)
3210 NEXT N
3220 FOR N=1 TO 9
3230 GET#8,T1$
3240 NEXT N
3250 GET#8,T1$:T1=ASC(T1$+CHR$(0))
3260 GET#8,T1$:T1=256*ASC(T1$+CHR$(0))+T1
3270 N$(E)=N$(E)+STR$(T1)
3280 GET#8,T1$:GET#8,T1$
3290 E=E+1
3300 GOTO 3340
3310 FOR N=1 TO 31
3320 GET#8,T1$
3330 NEXT N
3340 NEXT F
3350 IF TN=0 THEN GOTO 3370
3360 GOTO 3060
3370 CLOSE 8
3380 E=E-1
3390 RETURN
4000 REM******** MULTI ******************
4010 REM MULTI-COPY (A FULL DISC)
4020 REM********************************
4030 GOSUB 3000
4040 FOR I=1 TO E
4050 T$=LEFT$(N$(I),1)
4060 F$=MID$(N$(I),6,15)
4070 IF RIGHT$(F$,1)=CHR$(32) THEN
F$=LEFT$(F$,LEN(F$)-1):GOTO 4070
4080 GOSUB 1090
4090 NEXT I
4100 RETURN
5000 REM******* ERROR ******************
5010 REM DISK ERROR REPORT
5020 REM********************************
5030 INPUT#15,EN,EM$
5040 IF EN=73 THEN GOTO 5030
5050 IF EN<20 THEN RETURN
5060 PRINT"{CLEAR}DISK ERROR - ";EN;" ";EM$
5070 PRINT"{DOWN}{DOWN}PROGRAM STOPPED"
5080 CLOSE 15
5090 CLR
5100 STOP
6000 REM******** STARTUP ***************
6010 REM INITIALISE ETC.
6020 REM********************************
6030 OPEN 15,8,15
6040 DIM M$(500),TP$(10),N$(144)
6050 FOR N=1 TO 8
6060 READ TP$(N)
6070 TP$(N)=TP$(N)+"  "
6080 NEXT N
6090 E=0:DP=1:GOSUB 2000
6100 RETURN
6110 DATA "{RVSON}SEQ{RVSOFF}","{RVSON}P
RG{RVSOFF}","{RVSON}USR{RVSOFF}","{RVSON
}REL{RVSOFF}"
6120 DATA "SEQ","PRG","USR","REL"
7000 REM******** VARIABLES *************
7010 REM LIST OF VARIABLES
7020 REM********************************
7030 REM DP=NEXT PAGE OF DIRECTORY
7040 REM E=NUMBER OF FILES ON DISK
7050 REM F=DISK SECTOR FILE NUMBER
7060 REM I,N,M=COUNTERS - LOOP VARIABLES
7070 REM S=TRACK 18 SECTOR NUMBER
7080 REM   TO READ DISC DIRECTORY
7090 REM T1,T2=TEMPORARY VARIABLES
7100 REM TN=TRACK NO READ FROM DISC
7110 REM F$=FILENAMEABLES:
7120 REM I$=INPUT
7130 REM M$()=MEMORY COPY OF FILE F$
7140 REM N$()=DISC DIRECTORY ENTRIES
7150 REM T$=FILE TYPE
7160 REM T1$=TEMPORARY STRING
7170 REM TP$()=FILE-TYPES
```

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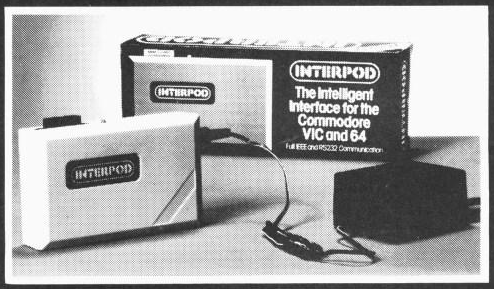

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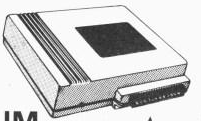

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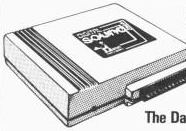

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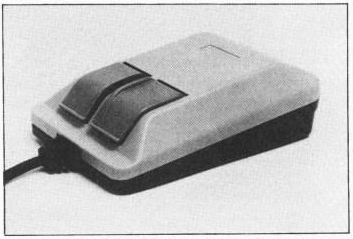

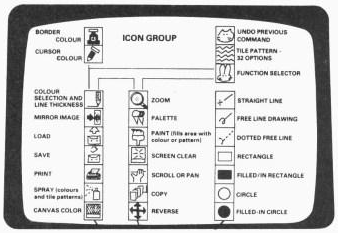

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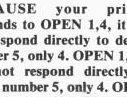
Connect it up

I OWN a 64 and a Quen Data-100 printer. I have purchased a Centronics adaptor, *The Commodore Connexion*, and have found that this is satisfactory for listings, but I cannot get a direct using device number 5 as stated in the directions. Is this an adaptor problem? Would it be possible to connect the printer via the serial socket?

I am also having problems with turle graphics using Boris Allen's book *Graphic Art*. I have managed to run Lo-res Graphics, but cannot get the turtle routine to work. Is there an error in the program.

J C King
Newbury
Berks

BECAUSE your printer responds to OPEN 1,4, it will not respond directly to device number 5, only 4. OPEN 1,4, it will not respond directly to device number 5, only 4. OPEN 1,"testing": CLOSE 1 will confirm this. The pinout of the serial I/O connector is; serial SRQIN; 2, GND; 3, serial ATN IN/OUT; 4, serial CLK IN/OUT; 5, serial DATA IN/OUT; 6, reset. The pin arrangement is:



This socket provides serial IEEE as required for the 1541 and CBM printers. I assume that you have an RS232 interface. Bits 3-7 of data A ($DD00) are used to control I/O, as follows; Bit 3, serial ATN output; Bit 4, serial clock output; Bit 5, serial data output; Bit 6, serial clock input; Bit 7, serial data input. The data direction register (DDR) for data port A is $DD02. Address the printer with OPEN 1,4 as above — remember the Connexion converts serial IEEE to Centronics.

As regards the turtle program, there is a misprint in line 10070, which should read FOR I = 1024 TO 2023 (not 1023). *Graphic Art on the CBM 64* by Boris Allen is published by Sunshine Books at £5.95.

On the move

I HAVE recently purchased an SX-64 portable. Although there is no cassette port, I would have thought that there was some way to load cassette programs. Would a device such as the Interpod permit communication via the serial port? I understand that there is also some sort of "black box" on the market which allows the 64 and the Vic to share peripherals.

R B Gammon
Didcot
Oxon

THERE IS no easy solution — in the case of very simple Basic programs where there is no memory conflict between the 64 and the Vic, you can obviously loads' unprotected software from cassette into the Vic, save it to disk and run on the SX-64. However, the Interpod communicates with IEEE devices, not cassette deck, and although I have seen details of modifications allowing a cassette port to be added to the SX-64, they involve extensive modification, changes to the PCB and kernal wedge software, so the risk and effort involved may not be worth it.

I would be interested to hear from any reader who has a simple method for loading cassette software into the SX-64, or for sharing peripherals.

Decimals placed

I USE A T158 for mathematical astronomy. This calculates to 13 decimal places, although it displays to only 10. I have a 64 with disk drive, and would like to use this to add sophistication to my programs, but it only has accuracy to eight decimal places. Is there an EPROM or any other method by wich I can achieve 13 decimal place accuracy with trig functions.

E J Handford
Rye
East Sussex

I HAVE NOT heard of any suitable peripheral, but it is possible to write a program which will give the required accuracy. If you are very keen, I would suggest Chapter 16 of Raeto West's *Programming the PET/CBM*. The principles explained apply equally well to the 64, and deal with the way the numbers are stored, and the way the Basic interpreter allocates byte storage. The book is still available from Biblios Ltd, Star Road, Partridge Green, Horsham, W. Sussex, price £14.

Playing on the C16

I HAVE A C16, and I'm having a problem with a program I'm writing. I need to know how to make a character in the program, controlled by the player, be unable to enter an area in the centre of the screen ten characters square. Can you help?

Fergus Rhodes
Wellington
New Zealand

IF YOU use a simple, unique character such as "*" to represent the player, you can PEEK the screen to find out where it is at any stage of the game. The C16 screen consists of 40 columns by 25 rows, so we will assume that your forbidden window starts at the seventh row and finishes at the 17th, and starts at the 15th column and finishes at the 25th. In terms of screen memory, these are defined by 3367,3377,3767 and 3777. Use routines similar in principle to the following.

```
100 INPUT "move"; R,C: REM or use joystick or key input routine
110 GOSUB 500: REM test for valid inputs
120 IF F=1 THEN F=0: GOTO 100: REM rejected inputs
130 POKE P,42: POKE P-1024, colour: REM screen code for "*" and colour value
140 rest of program
500 P=3072 + R*40 + C:IF P (3072 OR P) 4095 THEN F=1: RETURN
510 FOR J=1 TO 10: FOR K=0 TO 9
520 IF (3367 + K*40 + J) = P THEN F = 1:J = 10: K = 9: RETURN
530 NEXT K: NEXT J
540 RETURN
```

You can you see from the above that the character is only moved (line 130) if the move is accepted. Rejected moves are those outside the screen, negative values for R or C, and those in the 10×10 grid in the centre.

Vexing Vic 20

I HAVE about 70 cartridges for the Vic 20, and have found that some, such as **Deadly Duck** and **Final Orbit** by Sirius, and **Gridrunner** by Hesware, do not work properly on UK Vics; they either have a flashing screen while running, or the screen window is located off centre, with the cursor and joystick failing to centralise it. I could understand if the difference were to occur on just one cartridge, or on all of them, but why just these three'?

D P Goodman
17 Stevenage
Herts

THERE ARE some international variations in the Vic 20 design, and if this is not allowed for by the software author then you may get some problems.

This usually arises when the protection methods used are too specific to the machine's ROM. For example, the timing for the interrupt controlling the T1$d clock, and also the timing for tape and RS232, may require different Kernal constants. Other factors include characters, keyboard and power supply.

You might be able to solve your problem by connecting an external board by ribbon cable to the ROM kernal socket, and use a manual switch to activate it while the Vic is switched off. You would have to obtain the US ROM chip from the same source as your cartridges.

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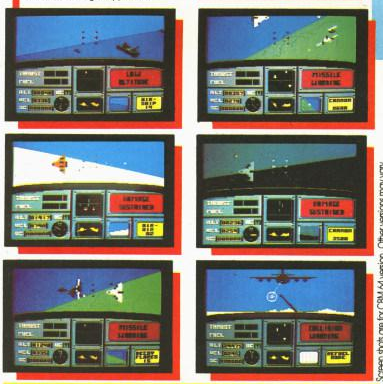

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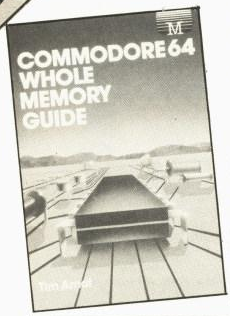

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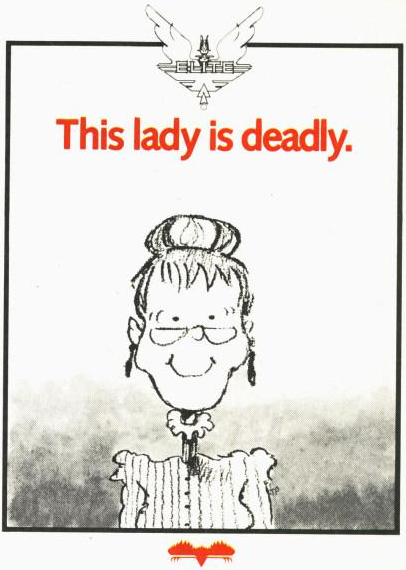

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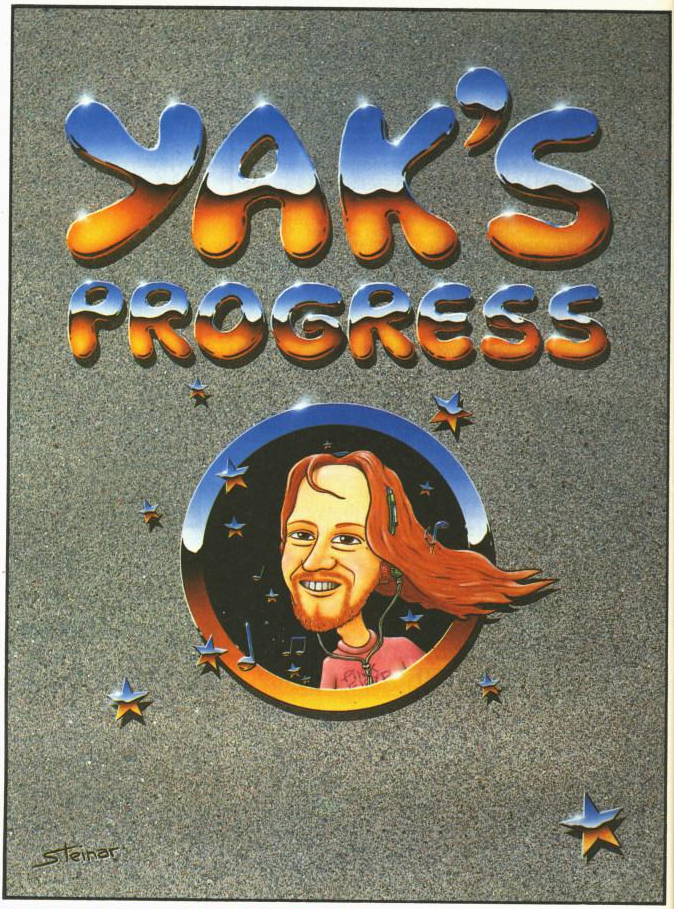

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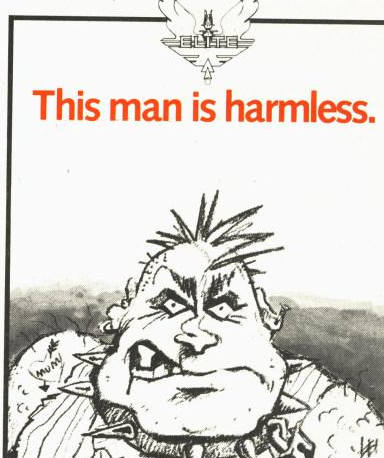

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COMMODORE 64 Sweden. Software to exchange, original. Please send list to: J. Leite, Ostergardsgatan 10, S-21222 Malmo, Sweden.

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USA COMMODORE 64 user wishes to swap software. I have a large selection, will reply promptly. Write to: Tom Lane, Rt 1, 26 Tarrytowne, Washington, WU 226191 USA.

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I WILL BUY your Vic-20 cartridges, or swap for my CBM64 games and utilities. Also wanted: 40/80 column card for Vic and Wordcraft 20. Phone 0438 811634 after 7pm.

WANTED dot-matrix printer for CBM64. Can offer 300 games/ utilities incl. Beachhead I/II, Skyfox, Exploding Fist, GI Joe, Summer Games, Master of Lamps, Talladega, Tunga Tüzer Kehribar Sokak, 9/29, 06900 Gaziosman Pasa, Ankara Turkey.

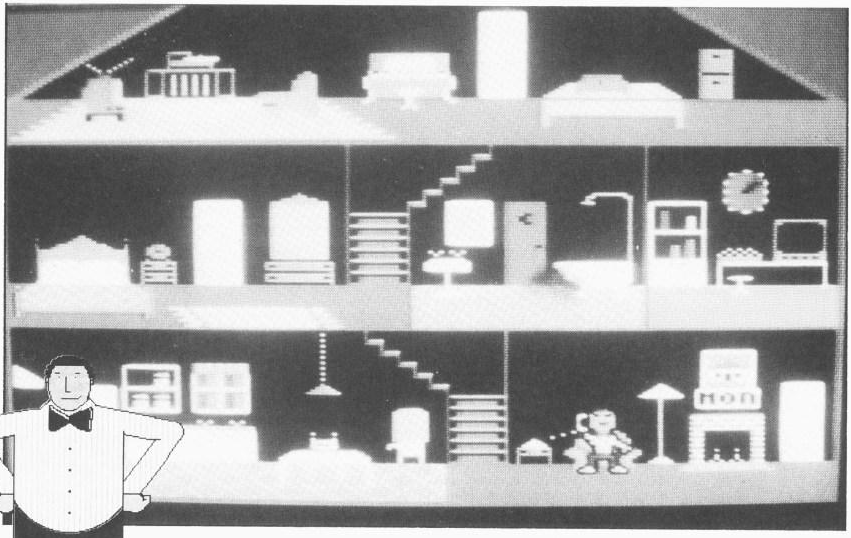
WANTED PARKER BROS Star Wars cartridge. Must be in good condition with documentation. Will pay up to £15. Phone 5.30pm to 8.30pm. Ask for Asif 01-272 1418.

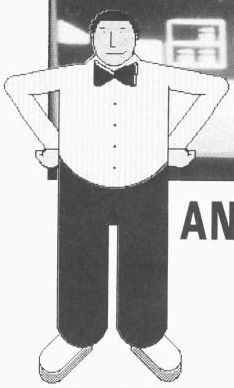
WANTED I'm searching for games on tape for MSX. I'm looking for Manic Miner on tape for MSX. Please send a list to David Grudge, West Boonraw Cottage, Hawick, Scotland or phone (0450) 75044.

COMPUTER PAL wanted, must have a C16 with Datasette. I live at 13 Morville Drive, Wellington, Telford. Phone: 0952 49117. Please ask for Steven. If out please leave a phone number so I can phone back.

WANTED COMMODORE 64 and disk drive and cassette (if available), plus manuals. Must be in good condition and cheap. Ring Keighley 67583 during office hours and ask for T. Hussain.

YOUR CHANCE TO WIN





AN ACTIVISION LITTLE COMPUTER PERSON

Twenty copies of the Little Computer People Research pack, on disk or cassette, are up for grabs in our easy-to-enter contest. You could have an LCP living in your 64 if you win!

ACTIVISION'S tireless research team has finally come up with an explanation for those computer bugs and glitches. Yes, there are **Little Computer People** living inside your 64!

Now you can win a research pack which will help you to find out more about these fascinating creatures.

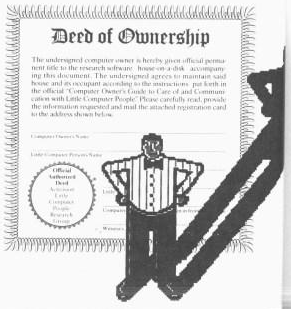
Programmer David Crane, **(Pitfall, Ghostbusters)**, and musician and artist Rich Gold, headed the team which developed the Little Computer People package. Realising that the best way to lure out the computer dwellers would be to build them a friendly environment in which to live, the team designed a 2½ storey house inside the computer.

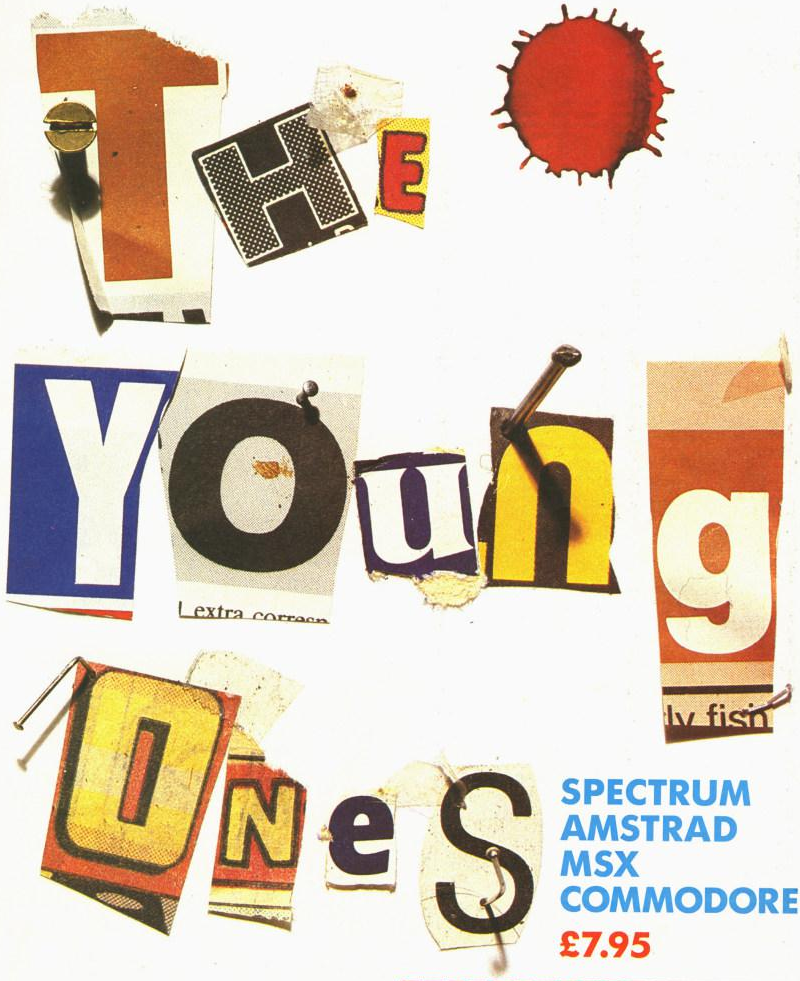
Load up the Little Computer People program and you'll see the house appearing on your screen. Then it's just a matter of time before you hear a ring on the doorbell, and a Little Computer Person moves in.

You'll be able to watch your Little Computer Person as he moves around the house, making phone calls, taking a shower, playing the piano, watching the TV, and feeding his dog. But, even better, you can communicate with your LCP, ask him to type you a letter, leave presents at his front door, play poker with him, try to work out what he says on the phone, or just share your innermost secrets with him! Every LCP has a different personality; have hours of fun finding out how yours spends his time in your computer.

We're giving away TWENTY copies of Activision's Little Computer People Discovery Kit. All you have to do is tell us WHO you would like to have living in your computer and WHY. Put your entry on a POSTCARD, or the back of a sealed envelope, with your name and address, and te!! us whether you would like cassette or disk software. Then post your entry to *LCP Contest, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP,* to arrive by the last working day of January. The twenty most original, amusing and appropriate entries will win the prizes.

Results will be announced in the March issue. All normal competition rules apply.





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ROBCOM Turbo 50

Ten fantastic utility cartridges from Robcom are up for grabs — just find the hidden words in the phrase ROBCOM TURBO CARTRIDGE!

LAST MONTH we reviewed one of the most impressive Commodore 64 add-ons to appear this year — the **Robcom Turbo Cartridge** range.

These programming utility cartridges are a must for any serious 64 owner. The top of the range unit, the Turbo 50, costs £39.95 and offers a staggering range of utilities such as;

- **BASIC TOOLKIT:** Including AUTO line numbering, DELETE line, FIND string, HELP to display programming errors, PAGELIST, SET screen and border colours, DEC/HEX convert, and many more
- **PROGRAMMED FUNCTION KEYS:** To give single-key loading, file backup, list, run and so on
- **RESET SWITCH:** To reset programs without clearing Basic or machine code routines from memory
- **FAST LOAD/SAVE:** Special routines to make tape or disk operations ten times faster than normal
- **DOS COMMANDS:** File merge, append, formatting, scratching, renaming, setting device numbers
- **PRINTER UTILITIES:** Allowing Centronics printers to be used with a suitable cable, including a LIST mode to translate characters into easy-to-read codes, column width setting, or full Commodore graphics set printing
- **MACHINE CODE MONITOR:** Full-spec M/c monitor with over thirty commands, using only 4K of memory
- **HEAD ALIGNMENT ROUTINE:** Using a special cassette included in the package to set up your datasette perfectly

There are five cartridges in the Turbo series, offering a combination of these facilities. All of them are totally system-transparent; they take up memory, and can be left plugged in all the time. There's a SHOW function which gives a full on-screen list of the new facilities available, and the Turbo cartridges come complete with a full manual.

Now we're offering you the opportunity to win one of TEN of these fabulous Robcom Turbo 50 cartridges, which will transform your 64 into a powerful and user-friendly computer.

All you have to do to win is to make up as many words as you can from the letters in the phrase ROBCOM TURBO CARTRIDGE.

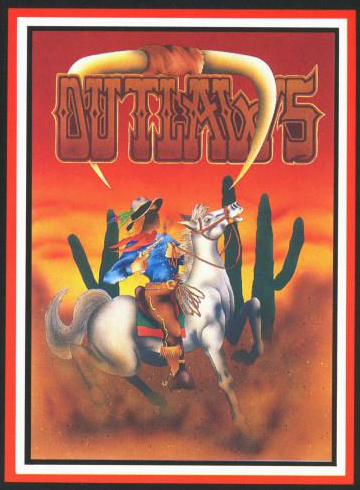
Each letter in the phrase may only be used once. Proper names, plurals, foreign words and slang are excluded.

When you have compiled your list, write it all down and complete this tie-breaker sentence in an apt, original and amusing manner in fifteen words or fewer; "Robcom's Turbo cartridges give your 64 a boost because..."

Add your name and address and put the number of words you have found on the top left corner of the envelope. ANY ENTRIES NOT BEARING THE NUMBER OF WORDS FOUND ON THE TOP LEFT CORNER OF THE ENVELOPE WILL BE DISQUALIFIED.

Post your entry to *Turbo Contest, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP,* to arrive by the last working day of January. Results will be published in the March issue. All normal competition rules apply. ■

COMMODORE 64



"DRAGONSKULLE", "OUTLAWS", "BLACKWYCHE", "IMHOTEP" recommended retail price £9.95 inc VAT. Available from W.H.SMITHS, BOOTS, J.MENZIES, WOOLWORTHS and all good software retail outlets. Also available from ULTIMATE PLAY THE GAME, The Green, Ashby-de-la-Zouch, Leicestershire LE6 5JU (P&P are included) Tel: 0530 411485

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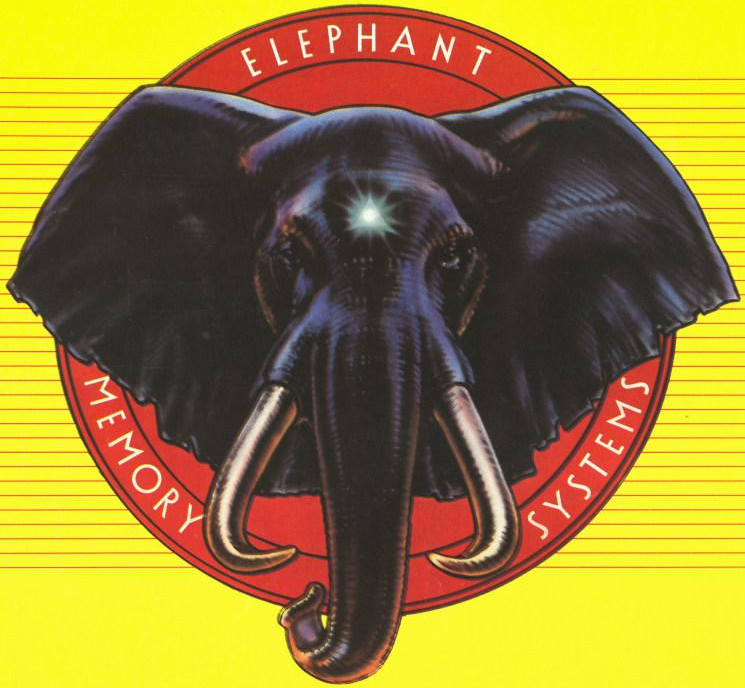

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